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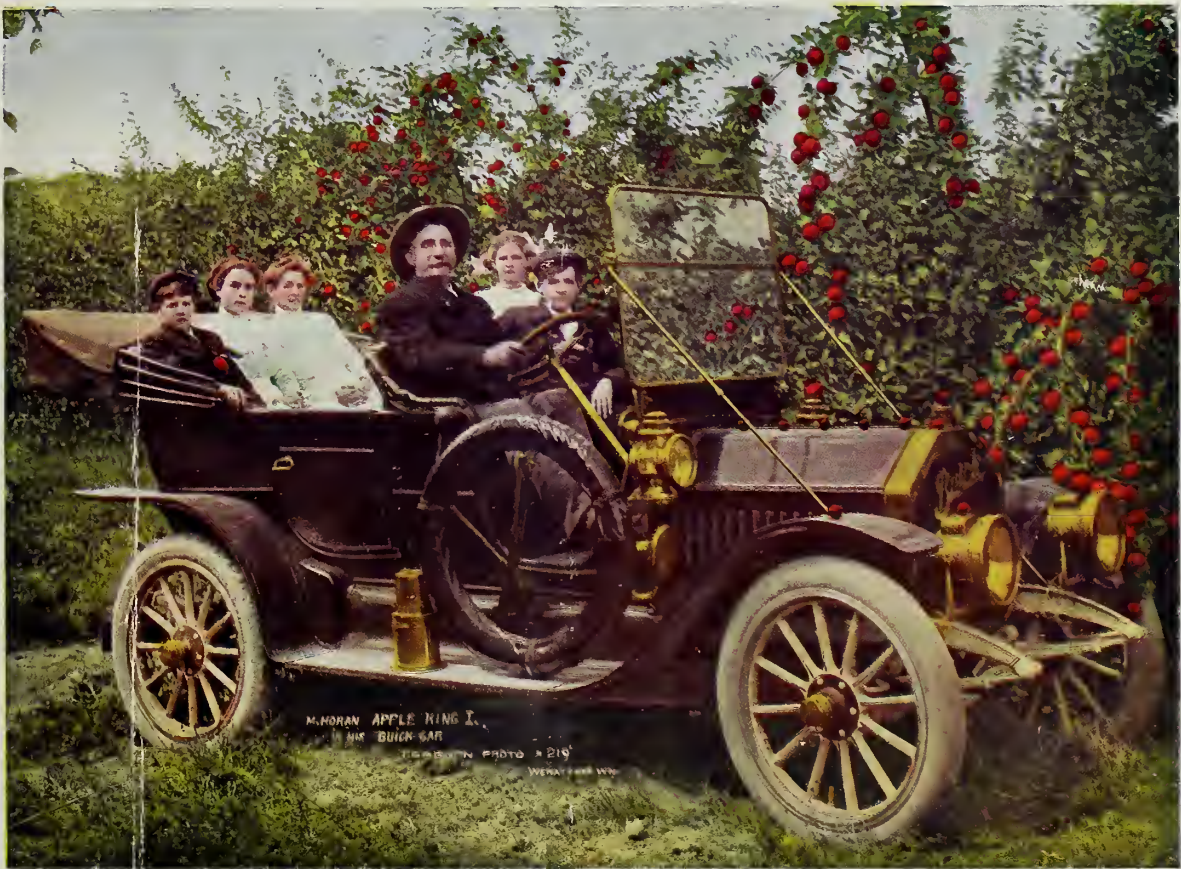


# BETTER FRUIT

VOLUME VI

MARCH, 1912

NUMBER 9



*Photo by J. Gagnon, Wenatchee*

M. HORAN, WENATCHEE, WASHINGTON, WHO WON THE SWEEPSTAKES FOR THE BEST CARLOAD OF APPLES AT THE FIRST NATIONAL APPLE SHOW, SPOKANE, 1908. HUNDREDS OF APPLE GROWERS OWN AUTOMOBILES OF MANY DIFFERENT MAKES, ILLUSTRATING THE PROSPERITY OF THE FRUIT GROWERS OF THE NORTHWEST

BETTER FRUIT PUBLISHING COMPANY, PUBLISHERS, HOOD RIVER, OREGON

Subscription \$1.00 per Year in the United States and Canada; Foreign, Including Postage, \$1.50

Single Copy 10 Cents



# FRENCH FRUIT TREE STOCKS

READY FOR PROMPT SHIPMENT

Apple Seedlings, all grades  
Pear Seedlings, 5-7 m.m. and 3-5 m.m.  
Quince Stocks, 5-7 m.m.

# AMERICAN FRUIT TREE STOCKS

Apple Seedlings,  
Small surplus, all grades.  
Japan Pear Seedlings,  
Number One, Two, Three and Four.

# APPLE AND PEAR GRAFTS

Our grafting season is now on. Order at once.

Large General Stock.

Write for Spring Wholesale Trade List.

# The Shenandoah Nurseries

D. S. LAKE, Proprietor

Shenandoah, Iowa

# More American Centrifugals are used for Irrigation Pumping than any other

The reason is the American Centrifugal is the highest development of the most modern type of pump and it is made by pump designers of 43 years' experience, and not merely pump builders.

American Centrifugals are made in over fifty regular styles in any size and equipped with any power.

Catalogue 117, the most complete centrifugal pump catalogue ever issued describes them.

Write for it.

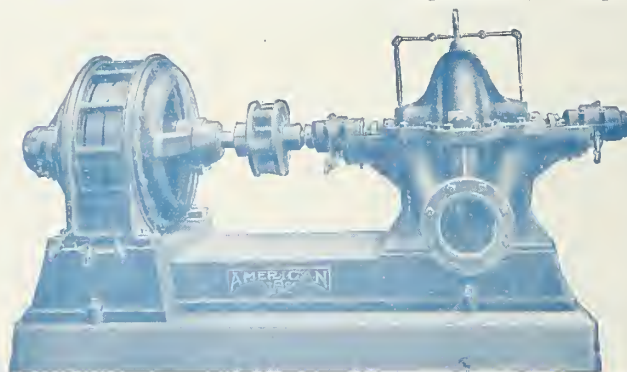


# THE AMERICAN WELL WORKS

General Office and Works: Aurora, Illinois, U. S. A.  
Chicago Office: First National Bank Building

PACIFIC COAST SALES AGENCIES:

70 Fremont Street, San Francisco. 341 S. Los Angeles Street, Los Angeles



# ONE HOOD RIVER GROWER SAYS



"I have used NIAGARA Spray for the past three years and found it superior to anything I ever used previously." Another sprayed over 7,000 trees with

# Niagara Lime Sulphur Spray

both as winter and summer spray, and his trees now are absolutely free from any fungous diseases. Ask for the names of these and other users of Niagara exclusively. Niagara is stronger and better. Note this official test in competition with others:

	Total Lime	Total Sulphur	Winter Strength Dilution	50 Gals. Diluted	Cost per Gal. Diluted
Sample No. 1.....	10.73	26.63	1 to 9.24	512	17½ c
Sample No. 2.....	11.94	30.03	1 to 10.45	572	15.7 c
Sample No. 3.....	12.00	29.21	1 to 10.12	556	16 c
Sample No. 4.....	12.12	23.98	1 to 8.38	469	19 c
SAMPLE OF NIAGARA	19.65	31.44	1 TO 11.00	600	15 c

Niagara's increased strength makes it by far the cheapest. WE FURNISH ANALYSIS ON REQUEST.

We are agents for the celebrated

# Ansbacher's Triangle Arsenate of Lead

99% pure by U. S. Department of Agriculture Analysis

There is NO GRIT in TRIANGLE LEAD to clog the spray machine and cut the fruit.

Our distributing agents are Clarke, Woodward Drug Company, Nottingham & Co., Portland; J. F. Spray, Cottage Grove; Thurston County Fruit Growers' Association, Olympia; Tacoma Implement and Seed Company; Walla Walla Fruit and Vegetable Union, Walla Walla; Shields Fruit Company, Freewater; White Salmon Fruit Growers' Union, White Salmon; Producers and Consumers' Co-operative Company, Seattle.

# Hood River Spray Manufacturing Co., P.O. Box 54R, Hood River, Oregon



# To Fruit Growers of the Northwest

The House of Steinhardt & Kelly, New York, take great pleasure in advising the Fruit Growers of the Northwest that they have again acquired on a purchase basis large blocks of their products consisting mainly of Apples and Pears. No concern in the East has so consistently used its best efforts on behalf of the Growers of the Northwest, and we herewith desire to thank them for their co-operation in giving us their support by putting up the most magnificent pack of fruit the East has ever seen.

Particularly do we desire to commend the Growers of  
The Hood River Valley of Oregon,  
The Wenatchee Valley of Washington,  
The Bitter Root Valley of Montana,  
The Mosier Valley of Oregon  
and among the individual packers and shippers  
The Wenatchee Produce Company of Wenatchee.

## Steinhardt & Kelly

101 PARK PLACE, NEW YORK

The Most Extensive Operators in High Class Fruits in the World  
Purveyors to the Most Discriminating and Exacting Clientele  
Direct Connections in all the Leading Markets of United States and Europe

IF YOU WANT TO MARKET  
YOUR

**FRUIT**

RIGHT

ALWAYS SHIP TO

**W. B. GLAFKE CO.**

WHOLESALE FRUITS  
AND PRODUCE

108-110 Front Street  
PORTLAND, OREGON

W. H. DRYER

W. W. BOLLAM

**Dryer, Bollam & Co.**

GENERAL  
COMMISSION MERCHANTS

128 FRONT STREET

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PORTLAND, OREGON

**LEVY & SPIEGL**

WHOLESALE

FRUITS AND PRODUCE

Commission Merchants

SOLICIT YOUR CONSIGNMENTS

Top Prices and Prompt Returns

PORTLAND, OREGON

*Correspondence Solicited*

**Ryan & Virden Co.**

BUTTE, MONTANA

*Branch Houses:*

Livingston, Bozeman, Billings

Montana

Pocatello, Idaho

Salt Lake City, Utah

Wholesale Fruit and Produce

WE HAVE MODERN COLD STORAGE FACILITIES  
ESSENTIAL FOR HANDLING YOUR PRODUCTS

*A strong house that gives reliable market  
reports and prompt cash returns*

The Old Reliable

**BELL & CO.**

Incorporated

WHOLESALE

**FRUITS AND PRODUCE**

112-114 Front Street  
PORTLAND, OREGON

**Richey & Gilbert Co.**

H. M. GILBERT, *President and Manager*

Growers and Shippers of

**YAKIMA VALLEY FRUITS  
AND PRODUCE**

Specialties: Apples, Peaches,  
Pears and Cantaloupes

TOPPENISH, WASHINGTON

**W. F. LARAWAY**

DOCTOR OF OPHTHALMOLOGY

EYES  
TESTED



LENSES  
GROUND

Over 30 Years' Experience

Telescopes, Field Glasses

Magnifiers to examine scale

Hood River  
Oregon

and

Glenwood  
Iowa

**Mark Levy & Co.**

COMMISSION  
MERCHANTS

**Wholesale Fruits**

121-123 FRONT AND  
200 WASHINGTON ST.

PORTLAND, OREGON

**T.O'MALLEY CO.**

COMMISSION MERCHANTS

Wholesale Fruits and Produce

We make a specialty  
in Fancy Apples, Pears and  
Strawberries

130 Front Street, Portland, Oregon

**SGOBEL & DAY**

ESTABLISHED 1869

235-238 West Street

NEW YORK

Strictly commission house. Specialists in  
Apples Pears and Prunes. Exporters of  
Newtown Pippins to their own represen-  
tatives in England.

**QUALITY  
QUALITY  
QUALITY**



# No-Rim-Cut Tires

## Proved Average Oversize, 16.7%

Goodyear No-Rim-Cut tires are advertised as 10 per cent oversize.

We claim that this oversize adds 25 per cent to the tire mileage.

Lately we made a comparison, based on cubic capacity, with five other leading makes of tires.

And No-Rim-Cut tires, on the average, proved 16.7 per cent larger than the other tires of equal rated size.

Only three tires out of 20 comparisons came within 10 per cent of our size.

That means in air capacity, not in

mere outer measurements. It is air that carries the load.

Each one per cent oversize means one per cent extra carrying capacity.

Oversize means to save blowouts—to increase the tire mileage—to cut down tire expense.

And you get this oversize in No-Rim-Cut tires without any extra cost.

That is one of the reasons why these patented tires now far outsell any other type of tire.

## Adopted by 127 Leading Makers

For the year 1910, 44 leading motor car makers contracted for Goodyear tires.

For the year 1911, 64 makers came to them.

For this year we have contracts from the makers of 127 leading cars.

That shows how car makers—the men who know best—have come to the Goodyear tires.

Last year our sales exceeded the sales of the previous 12 years put together.

We sold enough tires in 1911 to completely equip 102,000 cars.

In two years the demand for No-Rim-Cut tires has multiplied six times over. Now these tires are by far the most popular tires that are made.

Thousands of users told thousands of others that these patented tires cut their tire bills in two. The resulting demand now compels a capacity of 3,800 tires daily.

### Save One-Half

The saving comes here:

No-Rim-Cut tires make rim cutting impossible.

With the old-type tire—the clincher

tire—23 per cent of all ruined tires are rim-cut. That is proved by actual statistics.

A punctured tire may be wrecked in this way by running 200 feet. A soft tire may be wrecked without puncture.

No-Rim-Cut tires save that ruin and worry.

Then 10 per cent oversize, under average conditions, adds 25 per cent to the tire mileage.

It means an over-tired car to take care of extra weight. It saves the blowouts due to overloading.

And No-Rim-Cut tires, as told above, average 16.7 per cent oversize.

These two features together—No-Rim-Cut and oversize—under

average conditions cut tire bills in two. Tens of thousands of motor car owners have proved that.

### No Extra Cost

These patented tires used to cost one-fifth more than other standard tires. Now they cost an equal price.

These tires which can't rim-cut cost the same as tires that do. These oversize tires cost the same as skimpy tires.

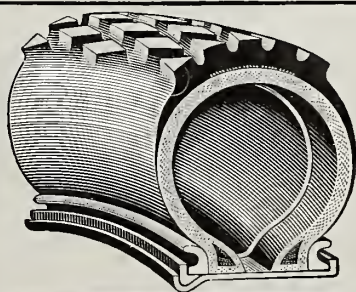
You can get them by simply insisting on Goodyear No-Rim-Cut tires.

These tires represent the final result of our 13 years spent in tire making.

In every way they are as near perfection as tires can ever get.

They will mean to you an immense reduction on the upkeep of your car.

Our new Tire Book is ready. It is filled with facts you should know. Ask us to mail it to you.



**GOODYEAR**  
No-Rim-Cut Tires

With or Without  
Double-Thick Non-Skid Treads

**THE GOODYEAR TIRE & RUBBER COMPANY, AKRON, OHIO**

Branches and Agencies in 103 Principal Cities. We Make All Kinds of Rubber Tires, Tire Accessories and Repair Outfits

[4611]



# Our Unqualified Statement

is that Mosier raises the very best of the world's best apples, and that land may be had here at lower prices than in any other high class, proven apple district in the Northwest.

If you want land in the very best district in the Northwest and among the class of people you know in your city home, and where the very best social, climatic, scenic and transportation conditions are to be found, and DO NOT want to pay the high prices asked in other localities on the Mosier class, you will have to come to Mosier.

We will answer your correspondence promptly and thoroughly, and should you favor us with a visit we will make your stay a pleasant one and you won't feel under any obligations.

**D. D. HAIL CO.**

MOSIER, OREGON

NO TROUBLE TO ANSWER QUESTIONS

## What Constitutes a Good Spray Pump?

**High Pressure**—to throw a strong, fine spray.

**A Pump**—of sufficient capacity under slow speed.

**An Agitator**—to keep mixture well stirred so that it cannot clog pipes and nozzles.

**Some Method of Cleaning** the strainer.

Ask any fruit farmer with experience. He will tell you that the most annoying thing is to find pump, suction or nozzles clogged when he has a tank full of spray mixture in the orchard and must *clean out* before his sprayer will work.

### Here We Come In

Automatic Brushes with Mechanical Agitators furnished with Empire King Barrel Pump and Watson-Osraymo Potato Sprayer, also with Leader-Triplex Gasoline Engine Machines of

10 gallons per minute capacity, and capable of a nozzle pressure of 250 to 300 pounds.

These Triplex Pumps are run only 40 to 50 revolutions per minute. This slow speed means long life, greater efficiency, less up-keep cost, the weight is not too heavy for two horses—1550 pounds with 2 H.P. engine and 150 gallon tank, including wagon with five-inch tires; or with 3½ H.P. engine and 200 gallon tank, 1800 pounds.

**Insist on  
This Trade Mark**



The prices are not too high for efficiency, durability, capacity and satisfaction.

Are you interested? A postal will bring you into touch with our nearest agency.

**FIELD FORCE PUMP CO.**  
Dept. B ELMIRA, N. Y.

**ACID BLAST ETCHED PLATES**  
*We have installed the only etching machines in the State of Oregon*  
*Blast etched cuts have a printing quality which has never before been obtainable with process engraved plates . . . .*  
THEY COST THE SAME AS THE OTHER KIND

**WE MAKE CUTS THAT PRINT**

**HICKS - CHATTEN ENGRAVING CO.**  
607 BLAKE-McFALL BLDG., PORTLAND, OREGON

## NURSERY STOCK OF ABSOLUTE RELIABILITY

That's the only kind to buy. Good trees bring success and poor trees failure. Fruit growers know this. They do not experiment. They buy non-irrigated, whole root, budded trees, and we number scores of them on our list of well pleased customers. We have prepared this season for an immense business. That means trees, trees, trees without limit as to variety and quantity. We also have an immense stock of small fruits and ornamentals. We solicit your confidence, and will take care of the rest. Catalogue on application.

**Salem Nursery Company, Salem, Oregon**

Reliable and live salesmen wanted

## WOULDN'T YOU

Like to move to a new country if it was not for the PIONEERING?

## OPPORTUNITY

Is a new fruit district (under irrigation five years) but three miles from the City of Spokane in the famous Spokane Valley. All our tracts have electric lights, domestic water, telephones, in fact every modern convenience. Large profits and an ideal home.

GET PARTICULARS FROM

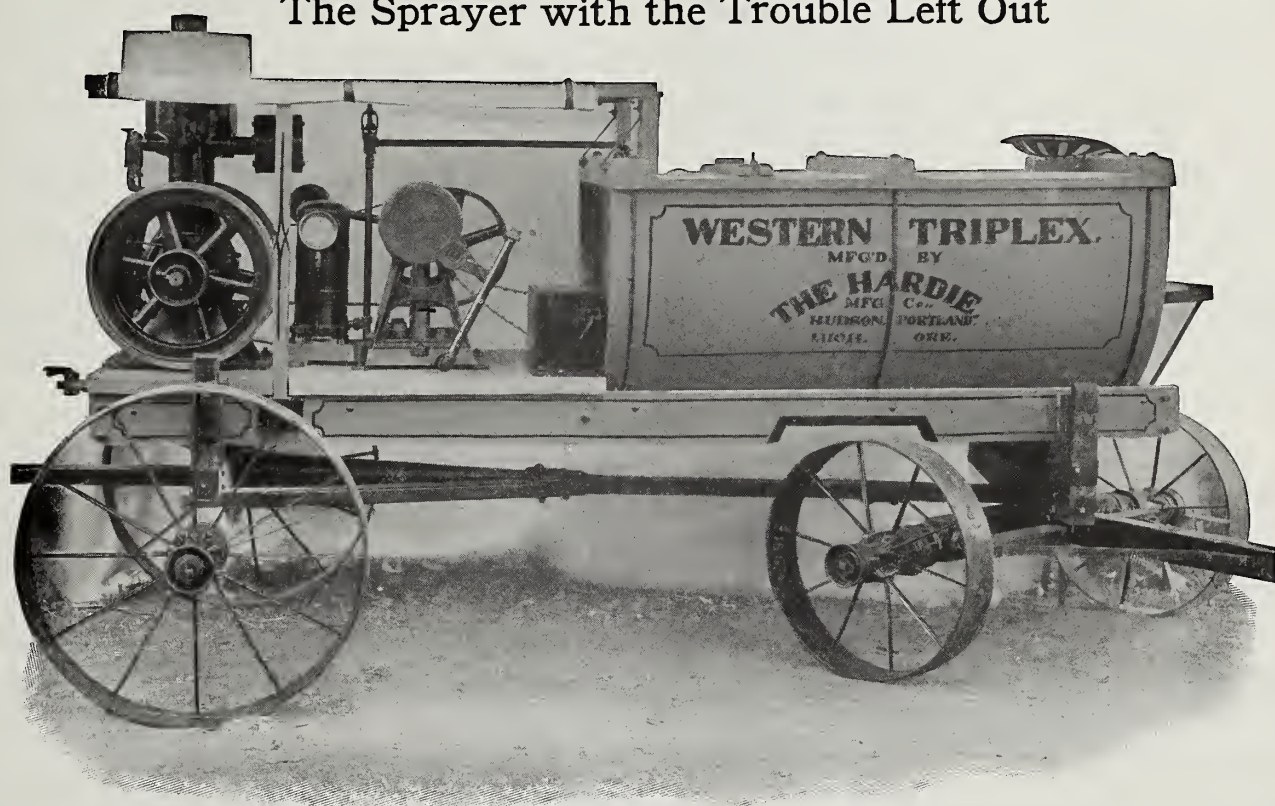
**CALLISON & IMUS, Exclusive Agents**

326 W. First Avenue, Spokane, Washington



# The HARDIE TRIPLEX

The Sprayer with the Trouble Left Out



Each year demonstrates the fact that the Hardie Triplex is best adapted to Northwestern orchard conditions.

This machine is built to work successfully in any kind of an orchard, whether it is closely set or open, level or hilly.

By using good materials in construction, we give you light weight without sacrifice of strength.

All the liquid you need and at an even continuous high pressure.

A Hardie Triplex means to you Better Spraying in less time and at lowest cost.

A postal card brings you our new 64-page catalog; giving a detailed description of the construction of our Triplex and twenty other hand and power sprayers; new spraying devices, etc.

Write for it today.

## The Hardie Manufacturing Company

Hudson, Michigan

49 North Front Street, Portland, Oregon

# Thirty-Four Years' Experience

GROWING NURSERY STOCK TRUE-TO-NAME WHICH WON OUR REPUTATION

We Have A Complete Line of Nursery Stock From Which to Choose  
Our Customers Are **GUARANTEED ENTIRE SATISFACTION**

Now is the **TIME** to **PLACE** your **SPRING ORDER** with the **OLD RELIABLE**

## MILTON NURSERY COMPANY

Write for Catalog B

A. MILLER & SONS, Incorporators

MILTON, OREGON

# The Tim Kelly Nurseries **TIM KELLY** PROPRIETOR

WAPATO, WASHINGTON

## Two Million Trees for Fall and Spring Planting

I have a splendid stock of **APPLES, PEACHES, PEARS, PLUMS, PRUNES,**  
**ORNAMENTAL TREES AND ROSES**

For Special Prices write to **TIM KELLY, Box 197, WAPATO, WASHINGTON**

# IDEAL NURSERY STOCK

We have all of the Standard Varieties for the Northwest and  
invite inspection of what we have to offer

Our scions are selected with care from Hood River Orchards. Our stock is grown in Hood River

**Reasonable Prices and Special Inducements to Large Planters**

We also have a very fine block of Clark Seedling Strawberry Plants to offer  
Also small fruits for the home garden

IF INTERESTED, WRITE FOR PRICES AND CATALOGUE TO  
**IDEAL FRUIT AND NURSERY CO., Hood River Oregon**

# Arcadia Irrigated Orchards

**The Largest Irrigated Orchard Project in the Northwest**

Arcadia is located twenty-two miles from Spokane. Our soil is rich and deep, entirely free from gravel, rock and alkali. Gravity irrigation, excellent transportation, ideal climate, no dust or sand storms.

**OUR PLAN:** We plant, cultivate, irrigate, spray, prune and care for the orchard for four years. Water free. Real estate taxes paid for five years. Over 4,000 acres is now planted to winter apples. You may remain at your present occupation while your orchard is brought to bearing, or, if desired, move onto the land at once.

**TERMS:** \$125.00 first payment secures five acres; \$250.00 first payment secures ten acres; balance monthly. Eight years in which to pay for your orchard. Write for literature.

**ARCADIA ORCHARDS COMPANY, SPOKANE, WASHINGTON**



# Why Some Arsenates of Lead Burn the Foliage

Foliage burns are caused principally by water soluble or uncombined arsenic usually found in excess in an Acid Arsenate of Lead. In the manufacture of this material more arsenic is forced into the mixture than can be properly combined, resulting in the product being very coarse-grained and containing an excess amount of arsenic not thoroughly combined.

When sprayed on the foliage, it does not cover the surfaces evenly and when exposed to the atmosphere it disintegrates and gives off free arsenic which burns the foliage.

Sherwin - Williams New Process or Neutral is different from the Acid Arsenate of Lead in that all the arsenic it contains is thoroughly combined with the lead. It is very fluffy and finely divided, which makes it light in gravity, and it stays longer in suspension

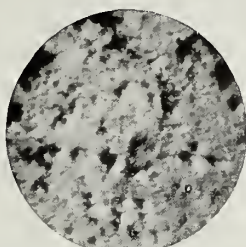


Fig. 1

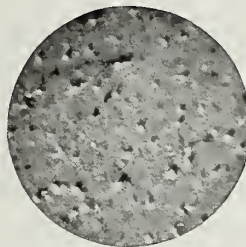


Fig. 2

A comparison of the Acid and the Neutral (S-W) Arsenates of Lead. Figure 1 shows the coarse character of the Acid Brand which disintegrates easily and gives off free arsenic, causing foliage burns. Figure 2 reproduces the Neutral (S-W) Brand which is finely composed, spreads over the foliage evenly and does not disintegrate and burn the foliage.

than the coarser, acid-material. On account of its fineness it has greater covering capacity and adhesiveness. Because it is thoroughly combined with lead, S-W Brand does not change its composition on exposure to the weather, and so will not burn the most delicate foliage. These exceptional qualities give

Sherwin - Williams New Process Arsenate of Lead a place second to none, especially in localities where alkali is prevalent in the water and soil. Write for particulars.

*A copy of "Spraying, a Profitable Investment," will be mailed free for the asking.*



**THE SHERWIN-WILLIAMS CO.**

INSECTICIDE AND FUNGICIDE MAKERS

707 CANAL ROAD

CLEVELAND, OHIO



## BETTER FRUIT

Has no peer in the Northwest

And so we have established

## THE FRUIT JOURNAL

along similar lines in behalf of the great irrigated fruit districts of the Rocky Mountain region, a companion paper to this, your favorite fruit magazine.

We have made it up-to-date, clean, high class editorially, mechanically and pictorially.

The subscription rate is \$1.00 per year. It is worth it.

**THE INTERMOUNTAIN  
FRUIT JOURNAL**

Grand Junction, Colorado

## Rogue River Fruit and Produce Association

Packers and Shippers of  
Rogue River Fruit

Finest flavored—Longest keepers

### PEARS

Bartlett  
Howell  
Bosc  
Anjou  
Comice  
Winter Nelis

### APPLES

Newtown  
"Autocrat of the  
Breakfast Table"  
Spitzenberg  
Jonathan  
Ben Davis

TWELVE SHIPPING STATIONS

Modern Economy Code

K. S. MILLER, Manager

## Stanley-Smith Lumber Co.

WHOLESALE AND RETAIL

### Lumber

LATH, SHINGLES, WOOD, Etc.

HOOD RIVER, OREGON

We are now selling tracts of 5 acres or more in our final and greatest planting at Dufur, Wasco County, Oregon.

## 5,000 Acres All in Apples

Over 3,000 acres of it has gone, mostly to Eastern people. The remainder will be gone by spring.

We plant and develop for five years, guaranteeing to turn over to you a full set, perfectly conditioned commercial orchard. After the expiration of the five years we will continue the care of your orchard for you, if desired, for actual cost, plus 10 per cent.

Planting and care is under supervision of the

### Churchill-Matthews Company

Spalding Building, Portland, Oregon  
The largest and most experienced planters in the Pacific Northwest

We will be glad to meet personally, or to hear by mail, from anyone considering the purchase of an apple orchard or apple land. On account of the bigness of the project, everything is done on a wholesale basis and prices for our tracts are proportionately lower. Reasonable terms. All our purchasers are high class people. No others wanted.

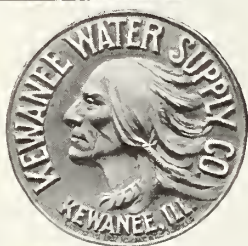
Write for booklet, or call on

### DUFUR ORCHARD COMPANY

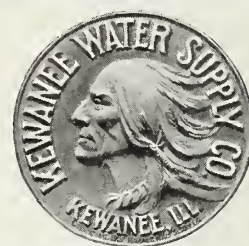
Suite 510 Spalding Bldg., Portland  
Oregon

Suite 2013 Fisher Bldg., Chicago, Illinois

## The Quality That Wears vs. Trouble and Repairs



### THE **KEWANEE** SYSTEM OF **WATER SUPPLY**



*(This Trade-Mark on all genuine Kewanee tanks and machinery protects the public and honest dealer.)*

## PRIVATE WATER SUPPLY PLANTS

*That Equal the Best City Service*

**Compact  
Simple**

**Durable  
Complete**

**Frost Proof  
Germ Proof**

**Dirt Proof  
Almost Fool Proof**

*Widely Imitated But Never Equaled*

Any power and any capacity of pump from 100 gallons to 12,000 gallons per hour—air tight steel storage tanks from 200 to 20,000 gallons capacity.

Any pressure up to 150 pounds per square inch, equal to a tower over 300 feet high.

The whole system is installed out of sight. Kewanee Pumping Units are tested under your conditions at the factory, and are ready to use when the crate is taken off.

*Write for Catalog No. 61, gives full particulars.*

*Distributors*

**JOHN DEERE PLOW COMPANY**

Kewanee Water Supply Company  
Kewanee, Illinois

**Portland, Oregon**

## If You Want the Best Orchard Land in Oregon

I have what you want, whether it is five to forty acres for a HOME ORCHARD, or 400 acres for subdivision.

I have land in the Hood River Valley or in the Mount Hood Valley adjoining Dufur.

If you do not want to take possession at once, your land will be planted and cared for, in the best manner, for you for from three to five years, when it will come into bearing.

For further particulars address, P. O. BOX 86, HOOD RIVER, OREGON

SIMONS, SHUTTLEWORTH & CO., Liverpool and Manchester

SIMONS, JACOBS & CO., Glasgow

Garcia, Jacobs & Co., London

J. H. LUTTEN & SON, Hamburg

OMER DECUGIS ET FILS, Paris

## European Receivers of American Fruits

FOR MARKET INFORMATION ADDRESS

Simons, Shuttleworth & French Co.  
204 Franklin Street, New York

Walter Webbling  
46 Clinton St., Boston

John Brown  
Brighton, Ont.

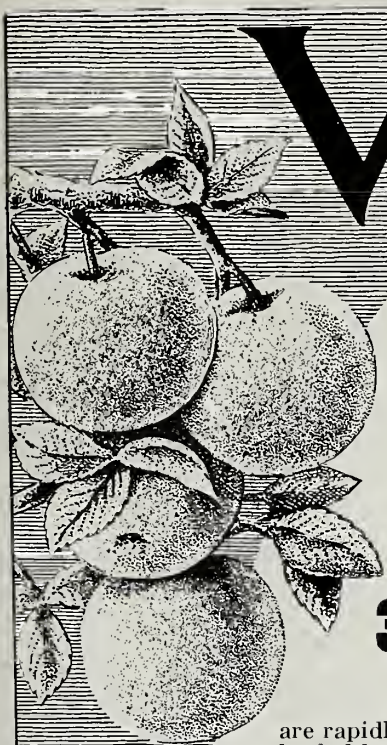
Ira B. Solomon  
Canning, N. S.

C. W. King  
Montreal, Que.

D. L. Dick  
Portland, Me.

OUR SPECIALTIES ARE APPLES AND PEARS





# VIRGINIA APPLE ORCHARDS

ARE WITHIN  
**300 MILES OF 25,000,000 PEOPLE**

## VIRGINIA APPLES

are rapidly acquiring a world-wide reputation. They have sold this year at \$2 to \$3 per bushel box, and **IT ONLY COSTS 10 CENTS PER BOX IN FREIGHT CHARGES TO PUT THEM INTO MARKET.**

## NO IRRIGATION NECESSARY

Virginia's average rainfall is 45 inches. Our climate is unsurpassed, with no extremes of heat or cold. Streams and springs flow everywhere, and clear, cold, crystal water abounds throughout this section.

## CONVENIENCES AND ADVANTAGES

Schools and churches are convenient and well equipped. Our rural agricultural high schools are equal to the best in the Union. Rural mail delivery and telephones serve all country districts. Low taxes, with abundant supplies of building material and labor at reasonable prices. Only twelve hours to New York City by fast passenger train service, and we are within three hundred miles of twenty-five million population.

When You Can Buy Apple Land at **\$15.00 PER ACRE** That is the Equal of Higher Priced Land in Every Respect, **WHY PAY MORE?**

**We Challenge Your Investigation of This Very Broad Statement**

Below are cited a few instances of property now on the market. There are dozens of others similar to them.

### No. 306 DEH 203 Acres Shenandoah Valley \$2,000

Located in Augusta County, one-half mile from good station on N. & W. Ry. All in young oak timber, lies well, comparatively smooth and level, fronts on public road at elevation of 1,300 feet above sea level. Fine fruit land, good air and water drainage. Stores, school, church and mill at station, one-half mile. No buildings.

### EXCELLENTLY DEVELOPED ORCHARD PROPERTY IN SHENANDOAH VALLEY

There are seven hundred peach trees on this property, which consists of 115 acres. Majority of these trees are Elberta and Crawford's Early. These trees are four years old and ought to pay for place easily in two years. They have been properly cared for each year since planting. In addition there are some four-year-old Winesap and York Imperial apple trees and two hundred one-year-old York Imperials, also cherries, plums, pears, good vineyard and twenty-one bearing apple trees. Sixty acres of this land practically level, balance steep. Three-room dwelling house and well of free stone water. Property located within about four miles of one town of fifteen hundred population and one and one-half miles of another little town on N. & W. Ry. Price \$1,500 CASH.

Write for further information and a copy of our Special Bulletin of large undeveloped tracts suitable for orchard purposes.

## WHY NOT INVESTIGATE THE OLD DOMINION?

You will like it here. The delightful atmosphere and the charming social environment that prevails everywhere in this Southern section are particularly noticeable in Virginia. Our good roads, fine schools and churches, congenial neighbors and delightful climate all make life worth living, and we want to have the opportunity of welcoming you here in the Old Dominion.

This opportunity, due to special causes, is rapidly passing by. Prices are rising and it would be well for you to investigate while prices are extremely low.

Write now, while you think of it, for beautifully illustrated Quarterly Magazine, "THE SOUTHERN HOMESSEEKER," illustrated booklet "Virginia, the Home of the Apple," and a large assortment of other attractive literature, with maps, excursion rates, etc.

Address **F. H. LA BAUME**, Agricultural and Industrial Agent  
Norfolk & Western Railway, Box 3,047, Roanoke, Virginia

**N & W  
RY.**



## Hood River Nurseries

Have for the coming season a very complete line of

### Nursery Stock

Newtown and Spitzenberg propagated from selected bearing trees. Make no mistake, but start your orchard right. Plant generation trees. Hood River (Clark Seedling) strawberry plants in quantities to suit

SEND FOR PRICES

RAWSON & STANTON, Hood River, Oregon

**If** You like this publication  
You find it helpful  
You are in earnest about  
“Better Fruit”

Tell your fruit growing neighbors about it. Help us in this way to help you.

## This Light Weight Grader Will Solve Your Irrigation Problems

It is an all-steel one-man machine. It weighs only 600 pounds. It will stir your soil, level your land, cut laterals, pick up dirt and drop it where you want it, and cut ditches 24 to 36 inches deep at a cost of 2 cents a rod. It will do more work than big heavy graders in less time and with less effort. One man with two horses operates it. Ditches cut with the 20th Century Grader are “V” shaped, with firm, solid sides—no fear of their being washed down.

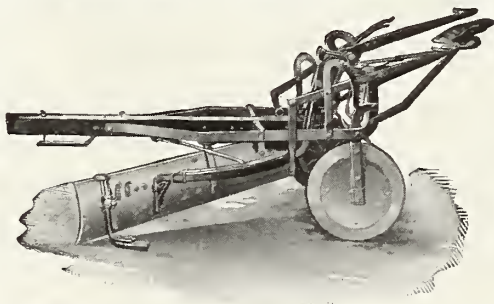
## 20th Century Grader

is a many purpose, easily operated machine that pays for itself over and over again and puts money into your pocket.

To get big results your work must be right, so you must have the right machine.

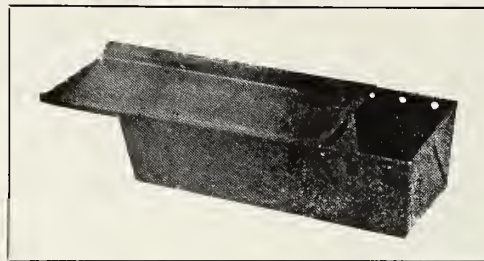
Let us tell you what others say about this wonderful machine. We want to prove to your satisfaction that it's a genuine money-maker. There are many uses to which the 20th Century Grader is specially adapted and many ways you can make big money by using it on your ownland and on your neighbors'.

Write for our interesting and valuable free book giving full information about this money-making machine, what it has done for thousands and will do for you.



**THE BAKER MANUFACTURING CO.**

542 Hunter Building  
CHICAGO, ILLINOIS



## Millions of Dollars

were lost by the orange and lemon growers of California last Christmas night because they were not equipped with proper heating devices. In some districts temperatures of 18 above were recorded, and a 14-hour burn was necessary. Every user of

## The Hamilton Reservoir Heater

made good against these terrific conditions, and the valuable lesson was learned at a tremendous cost that none but a large heater with reservoir capacity and with the REGULATED FIRE provides full protection for such conditions.

The growers of California no longer want inefficient, small heaters, as they will not do for a 14-hour burn against 12 to 14 degrees of frost.

Mr. Fruit Grower, you had better profit by their experience when buying your heaters, and get the most powerful equipment and one that holds several gallons of oil. Write us for the facts about this great frost fight and the only heater that gave every user full satisfaction. The big 6-gallon heater proved the big winning factor. Write us for information.

## Hamilton Orchard Heater Co.

GRAND JUNCTION, COLORADO

## Come to Berlin

Every man who plants an orchard ought to COME TO BERLIN for his trees; we mean this literally—come and visit us. As an inducement, *we will pay your expenses while here.*

Should you be unable to visit us, and to see our nurseries for yourself, you should send here for your trees. Our loose silt and sand, our Atlantic air and our scientific care produce trees the like of which seldom are equalled elsewhere. And they are as suitable for planting in the West as in the East.

Our offices and packing force has been reorganized thoroughly this year, and we are in better shape than ever before to handle your orders by mail. Through the “Harrison Service” idea we are able to make ourselves very useful to growers, even at a great distance from here.

### Harrison's 1912 Catalog Sent Free

This book contains the latest information about fruit and ornamental trees. In it you will find the facts about varieties; how to plant and how to order; how to unpack and handle trees so as not to lose or stunt any; how to trim roots and branches, and all needed details. We have a copy waiting your directions as to where to send it.

### “How to Grow and Market Fruit”

A fruit grower's guide book that has met with a warm reception. It has almost 150 pages; there are 24 full pages of pictures that help make plain the difficult things. Tells you what to do and when to do it, *and why it ought to be done.* We want agents for this book. Write for liberal terms. (See below.)

### HARRISON'S NURSERIES, BERLIN, MARYLAND

Send us 50 cents for copy of “How to Grow and Market Fruit” and we will forward the book by return mail, with coupon good for the amount on your first order of \$5.00.



Valuable farms for sale in Maryland and Delaware; the finest soil in the world and 3,000 miles nearer markets than the Northwest is. Write our Real Estate Department for particulars.



# Stark Delicious Apple Again

## Smashes All Records in 1911

**Leads every variety in Wenatchee Fruit Growers' Association List for 1911.—F. S. Burgess of Chelan County, Wash., makes \$882.93 net from 36 ten-year-old-trees**

Again, yes again, Stark Delicious has proven its claim to the title of "biggest profit-producer among all apples." For in 1911 it has again outclassed everything in the apple line by the big prices it brought its growers, just as it did in 1910, 1909, 1908. Spitzenberg, Winesap, Jonathan, Newtown—all of them, and the best ones, too, fell \$1.00 per box or more behind this wonder apple in selling price.

And think what that extra dollar means to the season's profit on the crop.

### Tops Wenatchee Ass'n List

Here are the prices made public about January 1st, of the Wenatchee Fruit Growers' Association, one of the strongest fruit growers' organizations in the West:

Stark Delicious..\$2.75	Grimes Golden ..\$1.35
Stark Black Ben. 1.24	Winter Banana .. 1.50
Ben Davis ..... 1.00	Stayman Winesap 1.41
Senator ..... 1.35	Jonathan ..... 1.44
Black Twig ..... 1.26	Rome Beauty.... 1.44
W. W. Pearmain 1.32	Spitzenberg ..... 1.80
Stark King David 1.40	Winesap ..... 1.80

These figures, Mr. Fruit Grower, tell a story of big, vital importance to you. We can't add a word that would make it stronger.

### \$882.93 Net Profit from 36 Trees

Stark Bro's, Louisiana, Missouri—Dear Sirs: "On December 18, 1911, you asked me for a report on my crop of Stark Delicious from my 36 trees, 10 years old. It was impossible to make a report at that time, as I did not have full returns until the present date. The report will not be so good as last year, but it is good considering the general short crop in this valley this year."—F. S. Burgess, Chelan County, Washington, January 22, 1912.

"Report of crop of Stark Delicious for the year 1911; 36 trees (10 years old) set in square form, 20 feet apart each way.

263 boxes Extra Fancy, at \$2.33.....	\$612.79
58 boxes Fancy, at \$2.08.....	120.64
87 boxes 'C' grade.....	149.50

\$882.93

"These prices are net—all freight, warehouse and marketing charges have been deducted."  
(Signed) F. S. Burgess.  
Chelan County, Washington.

### \$1,500.00 Net Profit Last Year

In the fall of 1910, from these same 36 Stark Delicious apple trees (then 9 years old), Mr. Burgess harvested a crop that netted him \$1,500.00.

—\$2,382.93 net from two successive seasons' crops, or \$33.10 net per tree per crop! And these 36 trees occupy only one-third of an acre of ground.

If you are interested in the business of fruit growing for the profit there is in it, we cannot give you better reasons why you should plant Stark Delicious than these true records. We have hundreds more of them—they all tell the same story of big profits—bigger profits than any other variety has ever earned.

### Our Prices Lowered for 1912

Because our volume of business on Stark Delicious has been tremendous we offer for Spring 1912 trees of this world-famed variety at 10 cents per tree cheaper than last year.

The enormous demand for Stark Delicious trees has made it possible for us to grow them in greater quantity (more than 3,000,000 propagated for 1912 trade) and better quality than ever before, and thus lower the cost of production. You get the saving.

These low prices are subject to 25% discount for cash with order.

#### ONE-YEAR TREES

2 to 3 feet—		
Each .....\$ .30	100.....\$ 23.00	
10 ..... 2.70	1000..... 180.00	

3 to 5 feet—		
Each ..... .40	100..... 32.00	
10 ..... 3.70	1000..... 265.00	

#### TWO-YEAR TREES

X, 3 to 4 feet—		
Each .....\$ .30	100.....\$ 23.00	
10 ..... 2.70	1000..... 180.00	

XX, 4 to 5 feet—		
Each ..... .40	100..... 32.00	
10 ..... 3.70	1000..... 265.00	

XXX, 5 to 7 feet—		
Each ..... .50	100..... 40.00	
10 ..... 4.50	1000..... 330.00	

300 trees or more are sold at the 1000 rate.  
30 trees or more are sold at the 100 rate.  
10 trees and less than 30 are sold at 10 rate.  
Less than 10 are sold at the Each rate.

### Don't You Pay Freight

Let us do it. We pay freight on orders of \$10.00 net or more. We also box and pack free. The Stark Method of Packing is world-famous—it is so good that we guarantee safe arrival.

### Don't Delay Ordering

As mammoth as our stock of Stark Delicious trees is, it is not going to supply the demand. There are bound to be some planters, who delay ordering till the last minute, who will be disappointed. Orders are piling in now every day that keep our great force on the jump. You can't lose anything by ordering immediately. On the other hand you gain. Early ordering means perfect trees, carefully selected, carefully packed, and delivered at your station the day you want them.

### 8 Mammoth Nurseries in 6 Different States

It is a proven scientific fact that no one soil or climate will grow all kinds of trees to the height of perfection, and

since the Stark standard of tree quality demands that every tree be as perfect as it can be grown, we have eight great nurseries in six different states.

Eighty-six years of tree-growing know-how is back of every Stark Tree. Four generations of Stark men, scientists and expert horticulturists all of them, have devoted their lifetime to this one business. Better trees than Stark trees cannot be grown.

Don't make the fatal mistake of planting trees of questionable quality. Plant Stark Trees, with an 86-year reputation for dependability behind them. Then you can never be disappointed.

### Remember, These Are Exclusive Stark Features

- Lower prices for 1912.
- 25% discount to mail order buyers.
- Freight paid on orders, \$10 net or more.
- Free boxing—free packing.
- Guaranteed safe arrival of trees.
- Special Service Department Advice to Growers.
- Free books.
- Exclusive varieties of prize-winning fruit.
- Three-quarters of a century reputation for square deal behind every Stark product.
- A million-dollar nursery behind every statement made and every Stark tree sold.
- Fast daily refrigerator freight service.

### Stark Orchard Planting Book "Master Book of Master Minds"

Trustworthy information written by the great horticulturists of our Special Service Department—given free to the whole world. Not a catalog or piece of advertising, but a well of information; as the authors say:

"The contents is not the result of our own experience alone. It is a collection of the knowledge and experience of many men. Each has spent a large part of his life working with trees. Many have had scientific training. All are rich in that greatest of all knowledge—practical experience." It tells the real secret of success in orchard planting.

Also Free—Stark Condensed Year Book, "A diamond mine of information." This valuable book makes money for every man lucky enough to send for his copy. Old, experienced orchardists find almost as much helpful information in this book as do beginners. Our complete catalogue included. Editions are limited—send for your copies today. Use coupon.

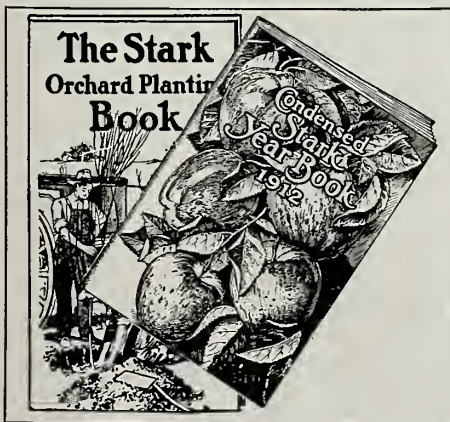
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**STARK BRO'S NURSERIES AND ORCHARDS CO.**  
Stark Station, Louisiana, Missouri

Send me free books without obligation on my part.

Name .....

Address .....



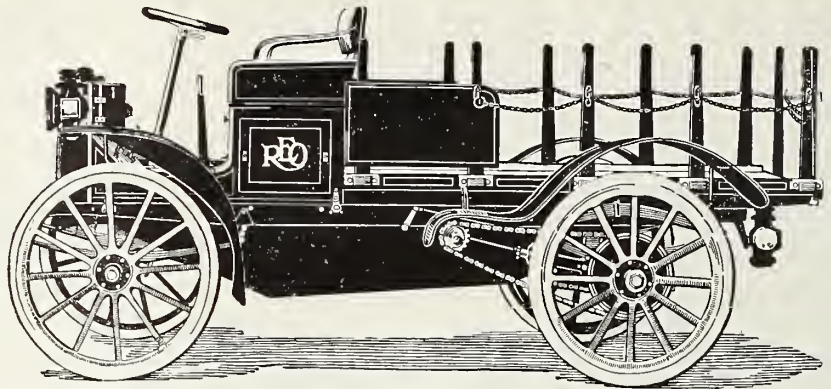
**STARK BRO'S**  
Nurseries and Orchard Co.

312 Stark Station LOUISIANA, MO.

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT



# REO Trucks



Wheel base, 90 inches—Horsepower, 10 to 12—Length behind seat, 6 feet—  
Capacity, 1,500 pounds. Front seat top, \$25 extra

## Only \$750.00

**And Built by R. E. Olds**

Please mark that price, and note this truck's capacity.

Most trucks which do what this truck does, cost from \$1,200 up.

We are building trucks on a business basis—at a dray-wagon profit.

They are built in a separate factory, with a capacity of 5,000 trucks per year.

And they are sold through the thousand dealers established on Reo cars.

To pay more than we ask for a truck like this is rewarding inefficiency.

### The Famous Designer

It goes without saying that R. E. Olds knows how to build a truck.

The dean of designers, with 25 years of experience. The builder of myriads of pleasure cars. The creator of Reo the Fifth.

Mr. Olds should be—and he doubtless is—the best qualified man in the business.

Mr. Olds' method of perfecting this truck was to put hundreds of them into use.

They were operated in city and country, on hills and plains, in all sorts of business service.

One loaded truck ran from New York to Oregon. Two carried the baggage in the Glidden Tour, from New York to Jacksonville.

These tests have now covered two years. And never has a truck of this size and capacity shown better records in service.

### 50 Cents a Day

This truck is built so a 12-year-old boy can drive it. There is nothing to get out of order—nothing to do but steer.

It is immensely economical. On a six months' test, covering 4,553 miles and making 3,773 stops, the cost for gasoline, oil and repairs averaged 50 cents per day.

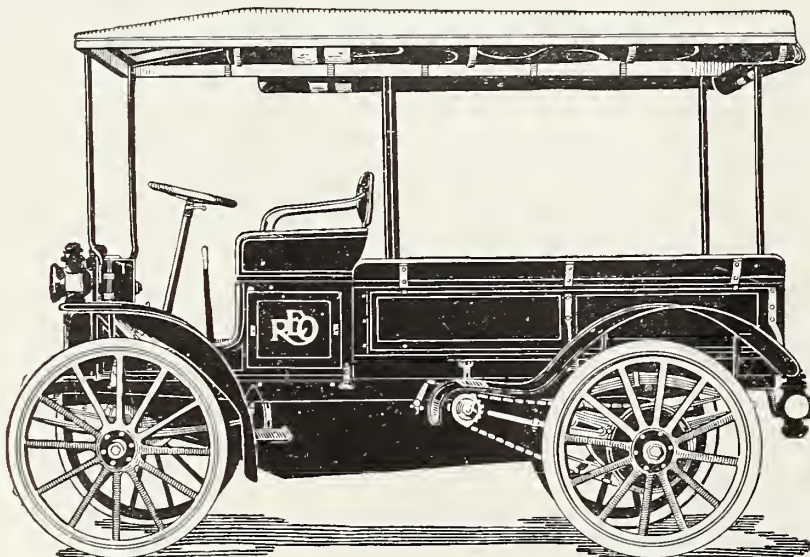
The average of many accurate tests shows the cost of delivery by Reo truck to be 60 per cent the cost of delivery by horse.

It does five times the work of a one-horse truck, and does it three times as quick.

It is always ready—never gets tired. Nothing can feaze it—heat or cold, rain or snow.

The Reo dealer—right in your town—will demonstrate the truck. He will teach your men to run it. And he is always there to take care of it.

Write us for information.



Price \$750 f.o.b. Factory. Top over all, as shown in cut, \$50 extra

## R. M. Owen & Co.

GENERAL SALES  
AGENTS FOR

## Reo Motor Truck Co.

LANSING, MICHIGAN



# BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

## Northwest Box Apple and New York Land Show

Address of E. F. Benson, at Washington State Horticultural Meeting, Clarkston

THE American Land and Irrigation Exposition, commonly called "The New York Land Show," given at Madison Square Garden, November 3 to 12, 1911, was claimed by many Eastern people to be one of the most interesting and instructive exhibitions ever held in that famous building. It was a "back-to-the-soil" movement, and was fostered chiefly by the railroad interests of the country. The general purpose was to acquaint city people with the resources and advantages of the farming districts and to give the owners of Western railroad securities some idea of the traffic possibilities of the Western country. The attendance after the first few days was more than the capacity of the building and the admission doors were frequently closed until enough people had passed out to justify letting a few more in. The Western and Southern roads were represented by many employes, who talked the resources of their different districts and distributed immense quantities of literature, which was carried away by the armful by many people who would not think of carrying home as much as a loaf of bread from a store. This unusual interest in the literature of the West and South was a matter of general comment among all exhibitors and employes. Elaborate silver cups were offered as prizes for the best exhibits of wheat, corn, oats, alfalfa, potatoes, sugar beets, hops, barley and cotton, and President Elliott of the Northern Pacific gave five hundred dollars in gold for the best twenty-five boxes of apples of any variety or varieties, competition open to the world. This prize was supplemented by a silver cup from Mr. A. C. Hanauer of Spokane for the best twenty-five boxes grown in the seven Northwestern States. Mr. Elliott afterward gave a silver cup as a second prize.

The notice of these prizes were published throughout the country during the spring and summer, but little or no interest was aroused among the apple growers. About September 1 I received a letter from Mr. Thomas Cooper, assistant to President Elliott, asking me to undertake the special work of soliciting exhibits from the various apple growing districts along the line of the Northern Pacific and expressing the hope that some grower in this territory might get the prize, but that it was of even more importance that a creditable display be secured. I was afterward authorized to employ an expert packer as an assistant and was

fortunate enough to enlist the services of Mr. Frank S. Kinsey of North Yakima, whose previous experience in apple contests enabled him to be of the greatest assistance to the exhibitors. After making a very careful canvass of the territory between the Bitter Root Valley, Montana, and the Kittitas Valley, Washington, we succeeded in securing nineteen twenty-five-box exhibits for the contest. Fifteen of these were from various districts in the Yakima Valley between Selah and Prosser, one was from

nineteen referred to from along the line of the Northern Pacific and in addition there were three from the Wenatchee Valley, one from British Columbia, two from New York, two from Delaware and three from Virginia. The first prize was won by Mrs. Ella D. Rowland of Zillah, the second by Mr. Robert Johnson of North Yakima; the third, fourth and fifth scores were also taken by Yakima Valley exhibitors; the sixth went to a New York grower living near Syracuse, the seventh to a Wenatchee Valley exhibitor. Many people have expressed a desire to know what were the ratings of the various exhibits, especially on the New York and Virginia apples—on what points did they score high or low; how did the Eastern apples compare with the Western on all points. For this purpose it may be well to make a comparison of rating on the first, second and sixth highest scores in the apple competition New York Land Show:

Item	Maximum	First	Second	Sixth
Quality .....	200	200	200	200
Color .....	200	195	195.4	197.33
Size .....	100	100	98.8	96.33
Uniformity .....	100	98.67	97.8	97.83
Condition .....	200	198.33	197.2	190.50
Pack .....	200	190.83	189.5	188.05

Totals.....1000 982.83 978.7 970.04

First: Mrs. E. D. Rowland, Zillah, Washington. Second: Robert Johnson, North Yakima, Washington. Sixth: G. C. Hitchings, Syracuse, New York.

Quality was not considered, because if the United States Pomological Society ratings should govern, and that is what is understood when quality is counted, then the contest becomes one between Spitzenberg apples only, as no other commercially grown apples are likely to be entered. In this contest "a variety of exhibits" was especially solicited, hence the score on quality was eliminated and all exhibits were given 200 on that point. All apples being larger than 88 or smaller than 128 to the box were scored off. For size 80 to the box the score was 90 points instead of 100; for size 72 to the box the score was 88 points. Robert Johnson had three boxes out of the twenty-five containing an 80 pack, which reduced his score for size from 100 to 98.8. Mr. Hitchings lost an average of three and two-thirds points on size because he had seven boxes with an 80 pack and two boxes with a 72 pack. Please note that the New York apples excelled on color both the first and second prize winning exhibits. On the pack his apples scored especially high on compactness because he shipped them to New York

### Features of this Issue

THE NORTHWEST BOX APPLE AT THE  
NEW YORK LAND SHOW

WATSONVILLE APPLE ANNUAL  
BANQUET

THE ZILLAH, WASHINGTON, APPLE  
DISTRICT

OPEN-HEAD METHOD OF PRUNING  
AN OLD ORCHARD

TOP-WORKING OF FRUIT TREES

THE COST OF CLEARING LOGGED-OFF  
LANDS

EXTENT OF FRUIT GROWING IN THE  
STATE OF WASHINGTON

Moses Lake, one from Spokane, one from the Clarks Fork Valley, near Paradise, Montana, and one from the Bitter Root Valley. With an apple crop varying from ten per cent to forty per cent of the normal yield, and with the exposition so far away and open to a world competition, no one seemed to have confidence in winning the prize. With twenty-five boxes, which were required to be grown by the exhibitor on his own place, the expense and trouble was a matter of considerable importance, and the nineteen exhibitors were actuated more from a sense of duty and loyalty to their district and a desire to show their products in the greatest apple market of the world rather than from any hope of winning prizes. Several (perhaps all) felt it a duty to support President Elliott because they recognized the keen interest he has always taken in promoting the horticultural interests of the Northwest.

Although more than fifty entries were made in this apple contest only thirty exhibits appeared, being the





Prune tree in full bearing, Willamette Valley

in barrels and packed into boxes in the building where exhibited, while ours were packed several weeks and the shrinkage was somewhat against them. A Western man did the packing for the New York exhibitor.

You would be surprised to know to what extent the progressive Eastern apple growers are looking to this country for education on what they call "up-to-date methods of apple growing." The Hood River man who packed the prize winning car in 1910 at Spokane was employed during last September, October and November to pack apples and conduct packing schools in various parts of New England and New York state. Many of these Eastern people are very much in earnest about "adopting Western methods," and they believe they can beat us at the business of raising extra fancy apples. From the splendid display made by New York, and also by the New England exhibit, which was not entered for competition, there is no doubt but what they can grow just as good apples as we grow if they will give the necessary care to the work. Their freight rates from most any part of New York state to New York city amount to twenty-five cents per barrel as against \$1.50 which it costs us to send three boxes. If ours are iced the cost is thirty cents additional. Their rainy seasons at spraying time,

their numerous old orchards full of fruit pests, their forest trees that harbor many pests injurious to the apples, their erratic seasons that only give them a maximum apple crop about once in six to ten years, their soil and climatic conditions which give the trees a slow growth and many other reasons will operate against their success and competition with our Western orchards. The one main reason why our Western apples are being sold so extensively in the East at this time is because of the quality in the box. Nobody pretends to pack apples in barrels and make them as good in the middle as the fancy layer on top. The commission men seem to think it is a hopeless task to ever educate the Eastern grower up to the point where his apples will be packed as well as the Northwestern box apple. New York state claims to grow more commercial apples each year than all the rest of the United States lying west of the Mississippi River, yet thousands of carloads of boxed apples from the West are sold every year in New York city at profitable prices. We find the same intense partisanship regarding apple districts of the East as we have out here. Western New York, Massachusetts, New Jersey, Delaware, Virginia (especially Shenandoah Valley) each claims to be the best apple growing district in the world.

While it is true that thousands of acres of old orchards have been grubbed out in parts of the country east of the Rocky Mountains it is certainly true that thousands upon thousands of acres of apples are now being planted in the states along the Atlantic Coast, and we should not overlook the competition from that country. The splendid appearance and careful pack of our apples secured their introduction into that competitive market. If we are to retain the present hold upon that trade we must keep up the standard of excellence. The striving for perfection by those who enter such contests is a great benefit to the apple business, but the winning of highest honors by a few exhibitors does not justify any grower in the prize winning district in misrepresenting his commercial output, such, for example, as putting very inferior apples or culls into a box and marking the same "extra fancy." If a full knowledge of the damage done to the community and the individual could be realized, no person would be so dishonest, so foolish or so careless as to do such a thing. Probably some people think this is an over-statement, but it is not. Nothing that I saw or learned at New York was more impressed upon me than an honest pack. A short story illustrates this most forcibly. Mr. Kinsey and myself visited a number of



leading wholesale dealers in boxed apples, and one of these stated that his firm bought largely of Hood River apples because he knew what was in each and every box without opening them. He called for a couple of boxes to be brought up to the office, and as he opened them and displayed the pack, uniform size, none of them off-color, all true to type and in perfect condition, his face fairly beamed with pleasure. I asked him why he had never tried to buy any Yakima apples and he said, "Oh, we can't buy everywhere. We buy about half the output of Hood River, some from Rogue River and some from Wenatchee." He said they used to buy some in a certain valley which he named, being one of the best known fruit districts in this state, but that a few years ago one prominent grower in that valley sold them a large quantity of apples of such poor quality and so greatly misrepresented as to grade and condition that they lost thousands of dollars. He gave the figures, but I did not at the time think about writing them down. He had been buying several years from a neighbor of this man and was always treated right, but after this disastrous deal his firm would not buy an apple from anyone in that entire valley. I said to him, "Why would you cut out the man that you did know and who had treated you honestly and fairly even though another man had injured you?" He answered, "I wouldn't buy an apple in a community or district that tolerated that kind of pack." Now, as unreasonable as that sounds, it seems to be

a condition that in this business as well as in other ways "No man liveth to himself alone."

Why is it that in Tacoma and Seattle as well as among the big New York dealers Wenatchee apples are held in much higher esteem than the Yakima apples? Those fruit growers of Wenatchee who have come in contact with the principal growers in the Yakima Valley know that neither district can claim any superiority over the other. The difference lies in the integrity of the pack. There are just as good growers and just as careful and conscientious packers in the Yakima Valley as in Hood River or in Wenatchee, but the area is so big and the different communities so far apart that the organization has not yet been able to establish and enforce upon everyone the necessary high standard of excellence and integrity. A few days ago I stepped into a little grocery store in Tacoma where my family trades and looked at some apples. I always look for the name of the grower, the variety, the number on the box and the quality, although I very seldom find all of this information on every box. There happened to be several boxes from Prosser grown by a man whom I knew very well and whom I knew had raised this year some very high class apples. This box was marked "extra fancy" and had on the end of the box the stamp, "Shipped from Prosser district Fruit Growers' Association, packed and shipped for Yakima Valley Fruit Growers' Association." When the box was opened there was not one apple in the two top layers

that would honestly grade extra fancy, or even go into the second grade, whatever you please to name that. About half might have gone into the third grade and the rest were culls, wormy, badly bruised and not true to type. The dealer took them back to the wholesaler because he had been deceived by the label on the box, which was the guarantee upon which he relied in purchasing. Instances of this kind reflect discredit upon the entire district as well as upon the grower and the marketing organization handling the fruit. In justice to those who do put up fruit well the names ought to be given in cases like this. When the public sentiment shall have become so developed that this kind of a case would be looked upon as a disgrace then the reputation of our fruit will be sustained without any doubt and our distant markets will be safe and profitable. Mr. Elmer Johnson, a near neighbor of this man, sent an exhibit to New York and one of his boxes scored 994.5 out of a possible 1,000, being the highest score given to any box examined in that contest. Unfortunately for Mr. Johnson the next box examined, being a different variety, scored down on color and uniformity so far as to put him out of the race for high honors. This is mentioned to show that the district was not at fault, but that the blame was entirely on the grower in the instance heretofore given. It is not pleasant to find fault and condemn, but this is not the first, and probably will not be the last, criticism of poor packing. Last year, at



Residences on the bank of the Des Chutes River at Bend





An alfalfa field in the Haystack District near Culver

the Prosser meeting of this association, Mr. Fred E. Thompson of North Yakima said: "I want to take exception to the light and frivolous manner in which growers of the Yakima Valley treat the words 'extra fancy.' The growers of Yakima Valley are falling behind our neighbors of Hood River and Wenatchee in the matter of packing apples. This is an admission I dislike to make, but it is a fact nevertheless. We have the fruit, but we are shy of growers who know and have the convictions to put up a first-class pack." This discussion may seem to some a digression from the announced subject, but the contact we had with the biggest dealers in the country made these things seem most vital at this time. May the time come soon when every apple grower will take such pride in the output of his own orchard and the reputation of his district that such criticisms as these will become unnecessary and be forgotten.

To briefly summarize the apple box situation. We have often heard the idea advanced out here that the Lafean bill, the Porter bill and other agitation for a standard box different from ours was traceable to the Eastern fruitgrower and the dealers in Eastern apples in barrels who were anxious to handicap us in the Eastern markets. This does not seem to be the case at all. Mr. Kinsey and myself discussed the box situation with several of the principal apple dealers in New York city, and with only one exception they all favored our standard box, which they called "the chunky box." While the California box, which we call the Northwest special, being 10x11x20 inches, containing 2,200 cubic inches, or fifty inches more than our standard box, is not looked upon as favorably by the trade in New York. They said with much emphasis that

the dealers were more concerned as to the quality inside the box than they were in a few cubic inches more space. This was especially true where our Northwest box has the number of apples stamped on the end. The one dealer we met who so strongly approved the Lafean bill had to admit finally that there was only one reason for enlarging our box, and that was to make it hold one-third of a barrel. Many of the progressive apple growers in New York, New England, New Jersey and Virginia are commencing to use boxes, and they all use our standard box, which, as far as we could learn, is the only one made by the manufacturers of apple packages in the East. One of the most persistent, and because of his official position one of the most dangerous, advocates of the Lafean bill was the commissioner of weights and measures of New York city. An interesting interview with his chief deputy explained the reason, which was that they had determined to clean out all dishonest or "short" measures purporting to contain a bushel or other standard measure. They had recently made one big bonfire in which over three thousand "short bushel" baskets and other so-called bushel measures were destroyed, and they propose to see to it that no apples should be sold in New York in "short" bushel boxes. The Lafean bill had been defeated in congress through the efforts of our Western men, and he said they proposed to present to their state legislature a bill that would probably be passed, and which in turn would force a national law making a standard box. They consider that the magnitude of their market gives them the opportunity to dictate as to the size of box. When we consider that the price paid for California grapes in the little auction room on pier twenty

fixes each day the price in California for their entire crop output we get some idea of the effect on prices generally of the New York market.

We succeeded, through the help of the president and secretary of the International Commission Merchants' Association, in getting Mr. John L. Walsh, the commissioner of weights and measures of New York city, and his chief deputy to visit our exhibit at Madison Square Garden. We showed them two of their half-bushel measures heaped up high with the apples taken from one of our packed boxes. These measures bore the commissioner's brand and it took us nearly a day to find them, as New York was very shy on official measures after the bonfire. We then showed them a box heaped up with apples thrown in loosely that had been taken from a box the same size properly packed. We also proved to them that our box was larger than a bushel, at which the commissioner suggested that it might be well to cut it down to just an even bushel. Someone suggested that a box ought to be just one-third of a barrel, and that appealed to him very forcibly. Our box demonstration made quite a hit with him, however, and the next day he sent his deputy down to pier twenty, where most of the boxed apples are handled, and investigations there convinced him that our box demonstration was all right. Something is going to be done soon toward establishing one standard apple box, and since our box is desirable why not work to have it adopted. It seems to be up to those growers who have used this box, whether they live in the Northwest or the extreme East, to take some action looking to this end, and as this association is the largest organization of growers who use these boxes it is probably up to us to take the initiative. Our box being 10½x11½x18



inches inside measurement, contains 2,173.5 cubic inches without the bulge, or as the Lafean bill describes it, "without distension of its parts." A properly packed box, however, is considered to have a bulge on top and bottom that adds 150 cubic inches to the contents, thus making the total actual capacity 2,323.5 cubic inches. The old Winchester bushel, which became the standard in the United States, contains 2,150.42 cubic inches, being 23.08 cubic inches smaller than our box, without the bulge, and 173.08 cubic inches smaller than our box as it is packed with the proper bulge.

In August, 1911, the commissioner of weights and measures of New York city issued the following notice to produce dealers and commission merchants relative to the sale of apples, pears and quinces in the City of New York: "I desire to serve notice upon you that on the first day of November, 1911, and thereafter, I shall enforce section 395A of the code of ordinances of the City of New York and sections 5 and 9 of chapter 20 of the consolidated laws, general business laws of the State of New York, relative to the sale of apples, pears and quinces in the City of New York. Apples, pears and quinces, when sold by the barrel, shall conform in size with the standard barrel as specified, as follows: 'Section 9. Barrels of apples, quinces, pears and potatoes. A barrel of pears, quinces or potatoes shall represent a quantity equal to one hundred quarts of grain or dry measure. A barrel of apples shall be of the following dimensions: Head diameter, seventeen and one-eighth inches; length of stave, twenty-eight and one-half inches; bulge, not less than sixty-four inches outside measurement, to be known as the standard apple barrel. Or where the barrel shall be made straight or without a bulge, it shall contain the same number of cubic inches as the standard apple barrel. Every person buying or selling apples, pears, quinces or potatoes in this state by the barrel shall be understood as referring

to the quantity or size of the barrel specified in this section, but when potatoes are sold by weight the quantity constituting a barrel shall be one hundred and seventy-four pounds. No person shall make, or cause to be made, barrels holding less than the quantity herein specified, knowing or having reason to believe that the same are to be used for the sale of apples, quinces, pears or potatoes, unless such barrel is plainly marked on the outside thereof with the words 'short barrel' in letters not less than one inch in height. No person in this state shall use barrels hereafter made for the sale of such apples of a size less than the size specified in this section. Every person violating any provision of this section shall forfeit to the people of this state a sum of five dollars for every barrel put up or made or used in violation of this provision. And no barrel marked 'short' will be permitted to be used for the sale of apples, pears or quinces in the City of New York."

The New York law further declares that "the quart shall contain, when even full, 67.2 cubic inches." This would make a bushel 2,105.4 cubic inches, or .02 cubic inch less than the standard Winchester bushel. The wording of the law seems to be very uncertain whether it is intended that the apple barrel shall contain 100 quarts or whether the quarts referred only to "barrels of pears, quinces or potatoes," and the apple barrel possessed the dimensions given in the law. If the 100 quarts does not refer to the apple barrel then they have no standard apple barrel, because no person could figure the cubic contents without having a single inside dimension. The Lafean bill was a slight improvement over the New York law because it specified that the distance between the heads should be twenty-six inches, and that was the only inside dimension given in that bill. A barrel is no standard of measure anywhere. First, because the laws of different states

have different sized barrels, and it is not a particularly desirable standard because it is neither square, round or any other shape capable of being easily measured to ascertain its inside dimensions and contents. The New York commissioner says, however, that a barrel contains 100 quarts, and while we do not believe any interpretation other than that of the supreme court would settle the question, we will assume for this discussion that he is correct. A barrel of 100 quarts would contain 6,720 cubic inches or three and one-eighth bushels. Three of our standard boxes aggregate 6,970.5 cubic inches, or 250.5 inches more than the New York barrel. If we do not count the bulge, three of our boxes make 6,520.5 cubic inches, or 200 inches less than a barrel, but since the bulge is a part of our box there seems to be no good reason for ignoring it or for saying that a properly packed Northwest standard box is not fully one-third of a New York standard barrel. The Lafean bill proposed to fix a box at "2,342 cubic inches without distension of its parts," but did not fix the dimensions of such box. In this connection I wish to ask, is it wise to pack apples with cardboard between the layers, especially when the apples are wrapped in paper? The Hood River apples we saw in New York were so packed and the dealer seemed to like it. He didn't object, anyway, and said it gave the appearance of extra care. What it really does, however, is to use up space that would either accommodate eight apples in an ordinary 2x2 pack of four-tier, or at least, apples of a larger size. If three of our boxes are expected to make a barrel they certainly should be full boxes. By having well packed boxes and by using proper efforts ourselves and getting the right help from Easterners who are now friendly to our box, and doing these things now, there seems good reason to believe that our present standard box may become the standard for the United States.



A Sugar Beet crop in Western Oregon



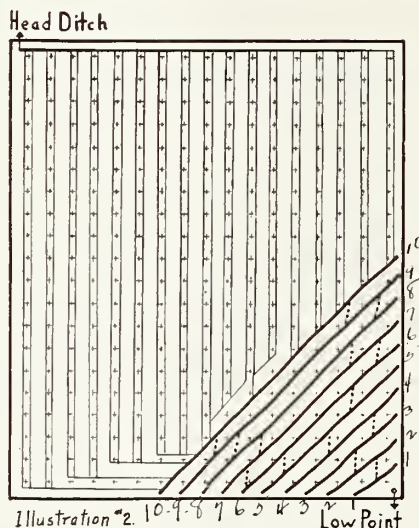
## Method of Irrigating Without Waste of Water

E. M. Gilbert, in Yakima Morning Herald

THERE is considerable alarm among those inexperienced in irrigation over the suits, court injunctions and threatening notices sent out by various canal companies. I am submitting the accompanying illustrations to suggest to the irrigator how he can greatly lessen, and in many locations entirely stop the running of waste water from his land. The solution to the whole proposition of waste water is: Level contour ditches made with a two-horse plow at the lower end of the irrigation rows. These level contour ditches should be sufficiently near together to irrigate the portion of orchard they cover. Ordinarily they should cover ten to thirty per cent of the orchard, the larger proportion being where the hillsides are steeper or where the irrigator wants to irrigate hurriedly, and therefore has a large quantity of waste water to care for.

Illustration one is for a field where the general slope is in one direction, with low point in or near the middle of low side. Heavy lines indicate large furrows made with two-horse plow on contour levels. These heavy lines represent practically level ditches. Illustration two is where the slope is in two directions with low point at one corner. Here, again, the heavy lines indicate large furrows made with two-horse plow. To locate these level contour ditches place an instrument at low point, then take stakes numbered one, two, three, etc., and place them on the two boundary lines at elevations six inches, one foot or two feet apart, according to the steepness of the field. Then turn the instrument up the diagonal row and place another line of stakes numbered one, two, three, etc., on the same levels as those on the boundary. By placing these stakes

the tract, feeding irrigation rows on either side on different slopes. You will note there are two low points on this tract, requiring that there be two sets of contour ditches. The level, however, is set as in illustration numbers one and two, at the lowest point, and the contour levels ascertained in the same manner. Illustration number four shows two sorts of homemade levels. Either of these will be sufficiently accurate for running these contour lines. Of course, a surveyor's level would be preferable, and an architect's level can be procured at a cost of about fifty dollars. The agricultural papers are also advertising a level for fifteen dollars, which would no doubt be sufficiently accurate. In addition to this, any farmer can take a pocket level or



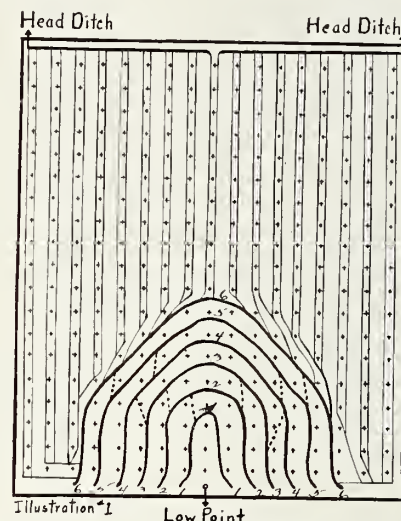
a carpenter's level, and with a little ingenuity locate the necessary points sufficiently accurate.

The illustrations here given will not meet the exact situation in many tracts, but any irrigator can make it possible to apply the plan to any tract. The advantages of no waste water are: (1) Freedom from damage suits, court injunctions and attorneys' fees; (2) the saving of water and using it on your own land—better irrigation with the same amount of water; (3) saving soil fertility, not leaching off the best elements and running them off to the ocean; (4) no swampy spots and no drainage necessary on your own land, for you will not run any of your furrows to the low points—in fact by keeping up contour furrows at low points, where they cross ravine or swale, you can keep the water out of low points.

Proper arrangement of head ditches will greatly assist. Where there is more than two inches fall to the rod in your head ditch use board flumes, made of one and one-eighth-inch or one and one-quarter-inch rough fir. I have used such a flume for thirteen years before it rotted out. Bore holes one inch in diameter to let out water for irrigation furrows. Control size of

opening by galvanized iron slides to be obtained from hardware stores at small cost, as they are made from scraps. Level head ditches where possible are the most economical and efficient.

Almost a million pieces of nursery stock were shipped into Montana to private orders during the nine months ending October 1, 1911, according to



figures compiled by the state board of horticulture. Figuring that Montana nurseries furnished approximately the same number to fruitgrowers, this would make the total of apple and crab trees 574,576, or 4,630 acres of newly planted apple land. This certainly testifies to the rapid expansion of the fruit business in this state. As eighty per cent of the fruit of Montana comes from the Bitter Root Valley it is clearly demonstrated that this favored section is gaining rapidly in horticultural resources. Cherries are next on the list, showing an aggregate of 37,392 trees, or 468 acres of newly planted cherries. This fruit is rapidly becoming a monetary winner in Western Montana, especially the large, sweet, big, black Bings and Lamberts. Over 20,000 plum trees, 16,000 pears and

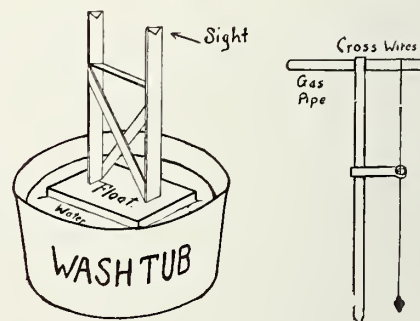
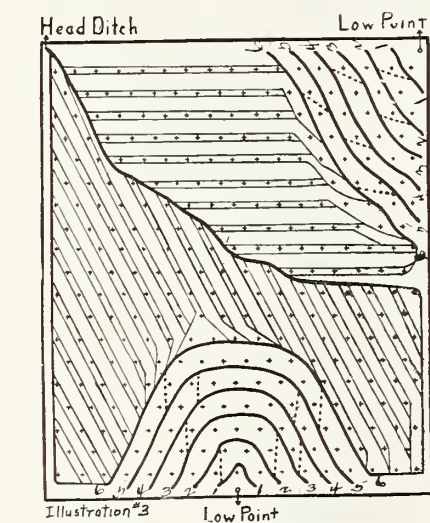


Illustration 4



along the fence row or under the trees they can be left throughout the season. In this way the ditches can be cultivated over and remade for the next irrigation without the use of any instrument or running of levels.

Illustration three shows a head ditch running on a ridge diagonally through

1,000 apricots help swell the new orchard acreage. Other fruits imported total as follows: Peaches, 3,336; quince, 192; grapes, 5,334; strawberries, 520,506; blackberries, 19,020; raspberries, 70,234; dew berries, 5,406; currants, 25,554, and shade and ornamental trees, 297,288.—Contributed.





Scenes showing towers for high trees and hillside spraying

## Watsonville Apple Annual Banquet

From the Watsonville (California) Register

**T**HE most enthusiastic meeting of the Apple Annual Association yet held was the annual meeting and banquet which took place last night, and the stockholders of the association placed their stamp of approval on the action of the board of directors by re-electing them for the ensuing year by a unanimous vote. Considerably over half of the stock of the association was present or represented by proxy, and the business meeting was one of interest to the stockholders. The financial report of the secretary shows the institution to be in a sound financial condition, there being a larger balance in cash now on hand than after the 1910 show, and the value of the association property considerably increased until it now reaches \$8,619.61. The increase in property will be of material value to the show in the future, and will be a saving in rent and expense of the show in future years. The cash now on hand is \$4,609.11.

The directors re-elected for the ensuing year are: O. D. Stoesser, A. W. Cox, J. E. Gardner, H. C. Peckhom, F. A. Hihn, E. Steinhauser, J. H. Thompson, J. A. Linscott, George W. Sill, R. H. Goodchild, Luke Scurich, Mateo Lettunich, E. A. Hall, W. R. Porter and C. H. Rogers. The affairs of the association have been conducted in a very able manner in the past and an unnecessary burden has been imposed on the finance committee in having to spend their time in soliciting funds to carry

on the show, but this has been changed for this year and a number of the representative citizens, business men, apple growers and packers were called on, and all agreed and expressed a willingness to voluntarily contribute their share of what is necessary to carry on the show. C. H. Baker, president of the Earl and Loma Fruit Companies, agreed to subscribe \$250 for each of the companies and make an exhibit; D. H. Leddy, for the Knights of the Royal Arch, stated the lodge had subscribed for 1,000 shares of stock in the association and would come through with a thousand more; D. J. Daly wants a bill sent to him for his share; T. E. Shoemaker will double his last contribution and numerous others are willing to contribute their share. Among them are George Birl, Senator Holohan, I. H. Tuttle, T. J. Horgan, D. Alexander, P. A. Callaghan, Ed Kelly, Dr. C. C. Rodgers and many who were not given a chance to express their views by the toastmaster on account of lack of time.

Seats were spread in I. O. O. F. Hall for 150 persons, and they were all filled when the stockholders and visitors had seated themselves at the table to enjoy the spread provided by the association. The banquet was an elegant simple affair of cold meats in abundance, salads, olives, pickles, bread, butter, cake, coffee and refreshments. J. E. Gardner acted as toastmaster for the occasion. A number of

distinguished persons were present, and among them were A. A. Dennison, of the Oakland Chamber of Commerce; Charles S. Fee, vice-president of the Southern Pacific Railroad Company; Judge Lucas F. Smith, of Santa Cruz; E. Shillingsberg, district freight and passenger agent of the Southern Pacific Company; H. W. Smith, colonization agent of the same company; Robert Newtown Lynch, vice-president of the California Development Board; Isaiah Hartman, of Boulder Creek; sales manager of Blake, Moffit & Towne of San Francisco; Mr. DeLeon, of DeLeon & Boulter of San Francisco; Al Kelly of San Francisco, and others. These gentlemen were called on by the toastmaster and responded in an able manner.

Robert Newtown Lynch of the California development board paid a high tribute of respect to the officers of the apple show, and said the California apple show at Watsonville had contributed more than any other single institution to the settlement of California. He stated it was almost impossible to realize the tremendous publicity the state had received through the apple show. Mr. Lynch is an authority on things pertaining to the development of the state, and so great is his confidence in the apple show here that he extended to the directors of the association the support of the state development board and promised to send to the next show a delegation from San Francisco equal



to the one sent to Los Angeles. According to his statement 100,000 people have emigrated to this state for the past ten years and next year would witness the arrival of more. He is thoroughly in touch with the situation, and recently has returned from Europe, where he went for the development board to study the quantity and quality of immigrants that would come to California after the opening of the great canal in 1915. He advocates the establishment of a state immigration bureau and wants Watsonville to have an exhibit in San Francisco in 1915, and speaks of the great opportunity that would be afforded to get people to come to Watsonville to see the greatest of apple shows. In closing, he pledged the support of the development board to help make the 1912 show the largest ever held in the world.

Mr. Gardner called on Charles S. Fee of the Southern Pacific Company, who pledged the support of his company to the directors of the association for the 1912 show. Mr. Fee related interesting statistics showing how his company was distributing data of California in the countries of Europe at all seasons and were working for the interests of the state. They delivered at the Chicago land show illustrated lectures on different parts of the state. He told how Forest Crissey had come to Watsonville at his solicitation and the benefit the district had derived from the visit of that noted writer. The support of the Southern Pacific was at the hands of the directors of the association for the asking.

A. A. Dennison of the Oakland Chamber of Commerce made a hit with the audience when, in response to the statement by Mr. Gardner that the Watson-

ville booster crowd had broken windows in that city and never had received a bill for them, he said there were more windows in the city unbroken and he hoped the booster train would come there this year and finish the job. He invited them to dinner in Oakland's new \$1,500,000 hotel. He tendered the support of the Oakland Chamber of Commerce, with its 1,800 active members, to make the 1912 apple show a success. His theory is not only "get together" but "grow together," and how Oakland is booming the state with buttons reading, "Boost for all California; there is room for millions more."

Great applause met E. Shillingsberg of the Southern Pacific Company, and he responded with a few well chosen words and brought with him the support of the San Jose Chamber of Commerce. He further said there would be no bill for broken windows from San Jose, but there were a few broken hearts there as a result of the visit of the Lady Hussars band. Al Kelly of San Francisco told how land similar and no better than Pajaro Valley, which is sold at up to \$700 per acre, was held at as high as \$2,000 per acre in the Northwest. He is a very able talker and considers himself a Pajaro Valley boy, as he has been making visits here since he was seven years old.

Superior Court Judge Lucas F. Smith of Santa Cruz tendered the support of Santa Cruz to the 1912 apple show, and delivered an address in a very able manner. He suggested the 1915 show be held in San Francisco and stated his intention of becoming a stockholder in the apple association. He also advocates a boat landing for Watsonville so apples may be shipped direct to European market without change of cars or

a transfer. Mayor Hall tendered the support of the City of Watsonville to the apple show in any other manner than financially and says he is willing to do his part. Steven Scurich spoke for the fruit packers and a number of others presented their views. Rev. F. A. Keast, for the pastors' union, spoke in a few well chosen words and advocated the continuation of the apple show, provided the report of the president for the abandonment of the midway was followed. George W. Smith, chairman of the amusement committee, told how he had devoted his time and energy in the midway and stated he was willing to meet the enemy on its own ground and do it again if the directors desired. The meeting was one large outburst of enthusiasm for the apple show and plans soon will be under way for the 1912 show, which will eclipse any former efforts.

#### Editor Better Fruit:

Below please find crop report of the Pajaro Valley for 1910-1911:

1910	
Apples (green), ears.....	4,023
Apples (evaporated), tons.....	1,600
Apples (canned), cases.....	23,000
Berries, chests (holding 48 1-lb. trays).....	150,000
Apricots (evaporated), tons.....	600
Vinegar and Cider, barrels.....	15,000

1911	
Apples (green), ears.....	4,500
Apples (evaporated), tons.....	2,000
Apples (canned), cases.....	25,000
Berries, chests (holding 49 1-lb. trays).....	148,000
Apricots (evaporated), tons.....	600
Vinegar and Cider, barrels.....	17,000

Very respectfully yours, Apple Annual Association, C. R. Greisen, superintendent of exhibits.

#### NOTICE

The tenth annual meeting of the Pacific Coast Association of Nurserymen will be held in Salt Lake City in June, 1912. Every nurseryman between the Missouri Valley and the Pacific Coast should attend. You are urged to be present. It will pay you. P. A. Dix, president Pacific Coast Association.



Eastern Triplex in the orchard of Wm. Vandever, Benton Harbor, Michigan



H. D. Stowell, Ludington, Michigan, about to start to the orchard with his power machine



One of the old type Hardie machines, which has done all the spraying in the forty-acre orchard of L. F. Sutherland, Benton Harbor, Michigan, for seven years



Spraying scenes Cox Bros', orchard near Proctorville, Ohio



There is no horticulturist better known in Ohio than W. W. Farnsworth. The above photograph shows his two Hardie sprayers ready for business





Apple blossoms just after the falling of petals; best time to spray for codling moth



Almost too late for the most effective treatment. Observe that the calyx cup is nearly closed



Peach limb badly infested with San Jose Scale

## First Year's Cost of A 1,000-Acre Washington Orchard

By W. B. Lanham, Horticulturist, Clarkston, Washington

**T**HIS 1,000-acre orchard is located on Clarkston Heights, adjoining the City of Clarkston, in Asotin County, Washington. The elevation is from 1,200 to 2,000 feet above sea level and about 500 to 600 feet above the valley. The ground is mostly rolling, none is level and some is quite steep. The soil is what is commonly termed volcanic ash. It is light, fertile, easily cultivated and very retentive of moisture. The lands was practically all wheat stubble and only needed to be broken. It was plowed in the fall and winter ten inches deep. This was done by contract at four dollars per acre. We had inspectors on horseback continually, with the plowmen, to measure the depth of the plowing. The soil was left rough, not harrowed that fall. We started planting the first of December and finished about the first of April—planting whenever the weather would permit. The land is surveyed into blocks and the blocks cut into lots of from two to ten acres each. Each of these lots is planted as a unit or individual orchard.

The planting method is a permanent apple orchard of thirty-foot squares. The land was staked off before planting, putting a stake where each tree was to stand. All base lines were established by a surveyor with a transit. The cost of staking was eighty-three cents per acre, including the cost of stakes. These were lath cut in two. The planting cost on an average \$2.44 per acre, although on some tracts, toward the last, on exceptionally good ground, the cost was as low as \$1.65 per acre. However, I am convinced it is poor economy to try to do planting too cheaply, believing it better to do that work well and economize somewhere else, if necessary. We planted on an average 48 apple, 10 pear, 20 peach, 10 plum or prune trees per acre. They cost, apple 10, pear 20, peach 12, and plum and prune 12 cents

each. Right here I might add that the time of transplanting appeared to make quite a difference in the growth the trees made this season. The ones first planted made at least twice the growth that those set out last did, with a gradual gradation between. Many of the earlier planted ones made a growth of four feet in length, and some even more.

The trees were headed eighteen to twenty inches from the ground, or knee high, at a cost of ten cents per acre. If there were any side branches they were cut off, leaving only one or two buds. This is all the pruning they received this season; all the limbs that formed were allowed to grow in order to make the trunk more stocky and also to protect it from the sun. Cultivation was begun as soon as the ground was in condition in the spring. The entire orchard was gone over first with an ordinary pegtooth harrow. The few soddy places were thoroughly disked and the entire orchard spring-toothed once. It was then gone over again with the pegtooth harrow; this left the soil in fine condition for the Kimball cultivator. The drivers of these implements were instructed to keep from two and one-half to three feet away from the tree rows, so that we were not troubled with many skinned or barked trees. To get close to the tree an ordinary corn cultivator was used, straddling the tree row as one would a row of corn. In this manner every particle of soil was stirred, and yet the tree was not touched. Of course, this required careful driving, but as these were the only riding implements used and the drivers were made to understand that their continuance with them depended on their care, we had little trouble on this score. We tried to get over the entire orchard with some of these implements once every two to three weeks.

I stated before that the orchard was planted thirty-foot square, with a filler in the center of each square. This makes rows only fifteen feet wide, but by running the rows diagonally to the planting we get the greatest width, about twenty-one feet. This is the direction we cultivated. The disking cost from ninety cents to one dollar per acre. An ordinary two-horse disk harrow having eight sixteen-inch disks was used. The work with the spring-tooth cost sixty to sixty-five cents per acre; the implement used was a seventeen-tooth harrow five feet wide. The pegtooth harrow was a two-horse ten-foot harrow, and the cost of cultivating with it was from thirty to thirty-five cents per acre. This implement covered the space between the rows at one round and then lapped a little in the center. Two sizes of Kimballs were used, a seven and a nine-foot. One of each was used and exactly covered the space between the tree rows, with the exception of the two and one-half to three feet next to the trees. This was the most economical instrument we used, the cost of each cultivation being only twenty-five to thirty cents per acre. It was more economical than the pegtooth harrow; because of the lighter draft, a team could walk along all day and not be dead tired at night. When the ground is in proper condition the Kimball cultivator is the best thing I have found to kill small weeds and preserve a dust mulch. The balance of the ground next to the tree rows was covered with the corn cultivator, with a cost of from fourteen to fifteen cents per acre for each cultivation. This was a six-shovel riding cultivator. For the first three cultivations we used the three ordinary shovels that came with it, such as one uses in cultivating corn. Then the two outside shovels on each side were replaced with sweeps; these acted about the same as the blades on the Kimballs, killing all the weeds and



leaving the ground smooth and pre-serving the dust mulch. Our idea was to keep the soil entirely free from weeds, but this was not possible without some hand labor, so in August the entire tract was gone over, and any weeds not killed by the cultivator were cut out with hoes. This cost twenty cents per acre.

On Clarkston Heights we had a central camp, consisting of an office with 'phone connection with the Clarkston office, cook and dining tent, sleeping quarters for the men and barns for the horses; also on the south end of the tract was another barn where the teams were fed at the noon hour, so the least amount of time was consumed on the road. A summary of the cost of cultivation is as follows: Disking 200 acres three times at \$1 per acre each time, \$600; springtoothing 1,000 acres at 65 cents per acre, \$650; pegtoothing 1,000 acres twice at 40 cents per acre each time, \$800; Kimball cultivating 1,000 acres seven times, each cultivating at 30 cents, \$2,100; corn cultivating ten times, 15 cents each time, \$1,500; hand cultivating 1,000 acres at 20 cents, \$200; making a total of \$5,850, or a cost of \$5.85 per acre.

Leaving the soil rough, as we did, to catch the winter rains, and then putting on a cap consisting of a dust mulch as soon as the soil could be worked in the spring, conserved enough moisture to last the season, so that a general irrigation was unnecessary, although the average yearly rainfall is only three inches. Early in the season we had two pests, one small and one not so small. The smaller was the ordinary pear slug. We go rid of it with a dust spray. We simply picked up a handful of dust and dashed it forcibly over the tree. There was no further trouble from the slug. This was as effective as any spray, and I know of none cheaper. Certainly there was no expense for machinery. The other trouble was the pocket gopher. They not only ate the roots, but even pulled the young tree under the ground and ate it. Poison was the only remedy we tried. The bait used was corn

soaked in water in which strychnine had been dissolved, and raisins and pieces of carrots with a crystal of the poison in them. The method was to make a hole with a sharp stick in the burrow, drop a piece of poison bait in and cover the hole, taking care not to fill the burrow. We found the carrot and raisins much the more effective bait. The expense of combating these pests was ten cents per acre. Along in August we made an estimate of the trees that had failed to grow, and it was about three and one-half per cent. There were wheat fields almost surrounding the orchards, and after the grain was harvested the rabbits barked some of the trees and increased the percentage somewhat. We tried three methods of protection from the rabbits. First, Yucca palm tree protectors were placed around the trees. The protector itself cost one and one-half cent per tree, and the labor of putting them on increased the cost to one and three-quarter cent per tree. Second, tar building paper was used, cut up into pieces about the size of the wooden tree protector, and fastened with ordinary paper clips, such as you use in the office. The cost of this, including labor, was one and one-tenth cent per tree. Third, whitewash, consisting of lime, soap and crude carbolic acid, was applied. This, with the cost of application, was only one-quarter cent per tree. The best brush I found for applying this was to take about eighteen inches of one-inch or one and one-quarter-inch grass rope, wrap all except about three inches of this with wire, and ravel out this three inches for the brush, using the wrapped part as a handle.

A summary of the entire expenses, including preparation of soil and cost of trees, would be as follows: Plowing, \$4; staking, 83 cents; planting, \$2.44; 48 apple at 10 cents, \$4.80; 20 peach at 12 cents, \$2.40; 10 plum or prune at 12 cents, \$1.20; 10 pear at 20 cents, \$2; cultivating ten times, \$5.85; pest control, 10 cents; healing trees, 10 cents; horticultural supervision, \$4, and office or overhead expenses 10 per cent,

\$2.77 per acre; making a grand total of \$30.49 per acre.

#### INTERNATIONAL HARVESTER COMPANY OF AMERICA

(Incorporated)

Chicago, December 12, 1911.

#### Editor Better Fruit:

Under separate cover we are sending you a copy of our 1912 almanac and encyclopedia and a set of our 1912 calendars. The almanac, together with an enclosure entitled "What the Farmer Owes to His Machines," is being sent to all the farmers' names on our mailing list. When the I. H. C. Almanac and Encyclopedia was first issued in 1909, the one thought in our minds was to make it a modern almanac. With that end in view each year we secured the services of agricultural experts in preparing special articles of value to farmers. In the 1912 edition will be found some especially valuable articles: "Some Economic History of the Original Thirteen States," by Cyril G. Hopkins; "Seed Testing," by Stephen D. Van Benthuyssen; "Rotation of Crops," by J. E. Waggoner; "Alfalfa," by J. E. Wing; "Up-to-Date Dairying," by W. D. Hoard; "Sanitation in the Country," by Henry Wallace, and other excellent articles on "Beautifying the Farm," "Irrigation and Drainage," "Fertility," "Crop Production," and so on. A copy of any one of these calendars may be secured by the readers of "Better Fruit" on application to the local I. H. C. dealer. Yours very truly, International Harvester Company of America, by M. R. D. Owens, advertising manager.

In line with the many other refinements of details and high grade equipment on Reo the Fifth—the last and most popular creation of the genius of R. E. Olds—we have adopted the Goodyear No-Rim-Cut tires as standard equipment, says R. M. Owen & Company, 1759 Broadway, local Reo distributors. These popular tires are ten per cent oversize, which easily adds from twenty to twenty-five per cent to the tire mileage. This oversize is not measured by calipers, but air capacity. As these tires have twenty-five per cent greater air capacity, and hence that much more load-carrying capacity, without additional weight or cost for the tires, it should be plain to all why we find so much enthusiasm over our tire equipment among buyers of Reo the Fifth.

#### Editor Better Fruit:

In your very interesting issue for November, 1911, on page 36, article by Professor Howard, there occurs a slight error. The statement is made that the "practice of smudging had its beginning some forty years ago in the vine and citrus region of California." Probably "14" was the word written. The work began, as you know, at Riverside, California, in 1895. Very respectfully, Alexander G. McAdie, San Francisco.

On page 39 of the February edition a mistake was made in the caption for the illustration on this page. It should have read "Spraying in the orchard of J. A. Wuest."



The Standard is quite different from any other spray pump, being arranged so that it can be used either with a bucket or knapsack, or with a barrel or tank. It is useful for any sized orchard up to a thousand trees. The Standard Stamping Company of Marysville, Ohio, will gladly send full information upon request



Sooty blotch disease on the apple



# The Famous Zillah District, Yakima Valley, Washington

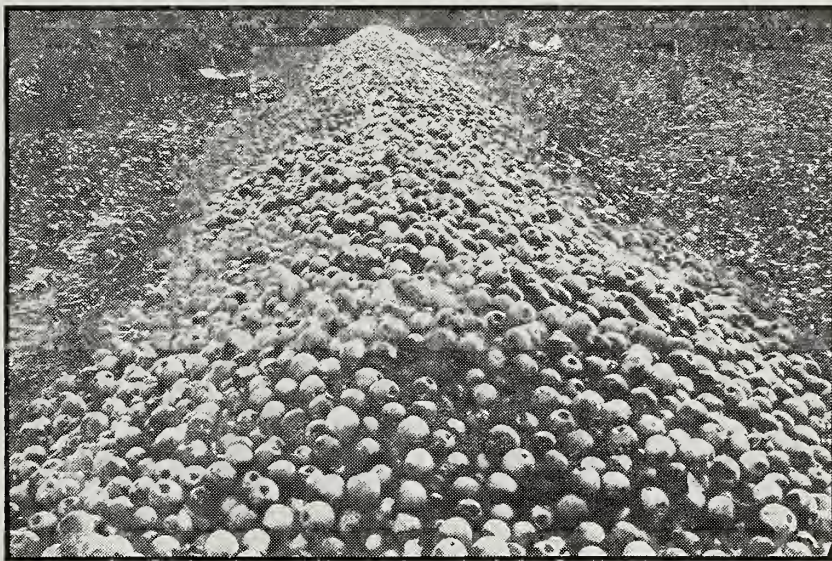
By C. G. Ware, President Zillah Commercial Club

**T**HE Zillah district of the Yakima Valley has suddenly come into its own! For fifteen years the ranchers of this district have been raising a superlative kind of fruit. Until the past year, however, this fruit has gone under the name of other districts, and it was not until Mrs. Ella B. Rowland of Zillah won the fifteen hundred dollar prize at the New York Land Show for the best twenty-five boxes of apples, in competition with the world, that the attention of people was called to this district. The methods that have led to this remarkable result are of interest to the entire fruit producing world. And how may these results be summarized? Surely they are not original with the fruitgrowers of this valley, for after all the production of a superior article must depend upon approximately the same methods the world over. We use the same spray, we prune in about the same way, we cultivate the soil after the same manner as other districts and we fertilize the ground after the manner approved of all men. That we take particular pains to do all things well is the largest single factor in whatever success we have attained. I will leave the scientific discussion of the fight against pests and the best methods of pruning and irrigating to others, and shall confine myself to the more general things that the growers of our district are paying particular attention to. I am going to assume in this that all growers know their business. After a perfect fruit has been grown, then comes the hardest part of all. I say hard, for it is the part of the business that is furthest removed from a rancher's study, namely, the marketing of his produce to the best advantage. To this end the picking, wiping, sorting, packing, shipping, and finally the

market reaching are larger factors than most growers assume.

These ends the growers of the Zillah district have set themselves the task of solving. In picking, the usual methods involving the best care are used. In wiping and sorting, a machine, a local invention, is doing the work better than ever a man with a commercial end in

discovered that the very best solution of most of the difficulties attending this item is competition in railroads. We can now get the kind and quantity of cars we need, and these when we want them. Another year and we will be able to get pre-cooled cars for our soft fruits with equal dispatch. In marketing, the growers of this district have



*Courtesy Zillah Free Press*

12,000 boxes of apples ready for packing

view has ever done it. In packing, the real test of a man's interest in his business is made manifest. It used to be thought that the growers of this or that district had a monopoly on the only real and genuine pack, but it is being discovered that a vital interest in fruit growing will inevitably lead a man to the right system. In shipping, we have

united with the rest of the growers of the valley. The Yakima Valley Fruit Growers' Association has been formed on the same plan that has made the citrus fruits such a marketable success. By this means the growers have been able to market their fruit more easily and at better prices than they ever experienced before. But few of the growers took advantage of this plan the past year, but, seeing the success attending the plan, enough growers have now joined to give the Zillah branch of the association the largest fruit tonnage of any branch in the Yakima Valley.

Climatically this district is fortunate. The endless days of sunshine and the uniformly mild winters tend to make the growing of good fruit as easy as possible. The light character of the volcanic soil is to be credited with making things still easier. Add to these water, when and where you want it, and the balance is "up to the man." Given a perfect fruit, commercial production has only begun. From this point the real task is to make a market. The association of growers, looking toward this end, is a most important step. Consumers must be able to get this perfect fruit, and above all must be educated to want it. This is the secret: "To create in the mind of the consumer a desire for the good fruit." As a district, we have in the past few years been more interested in this feature of the business than any



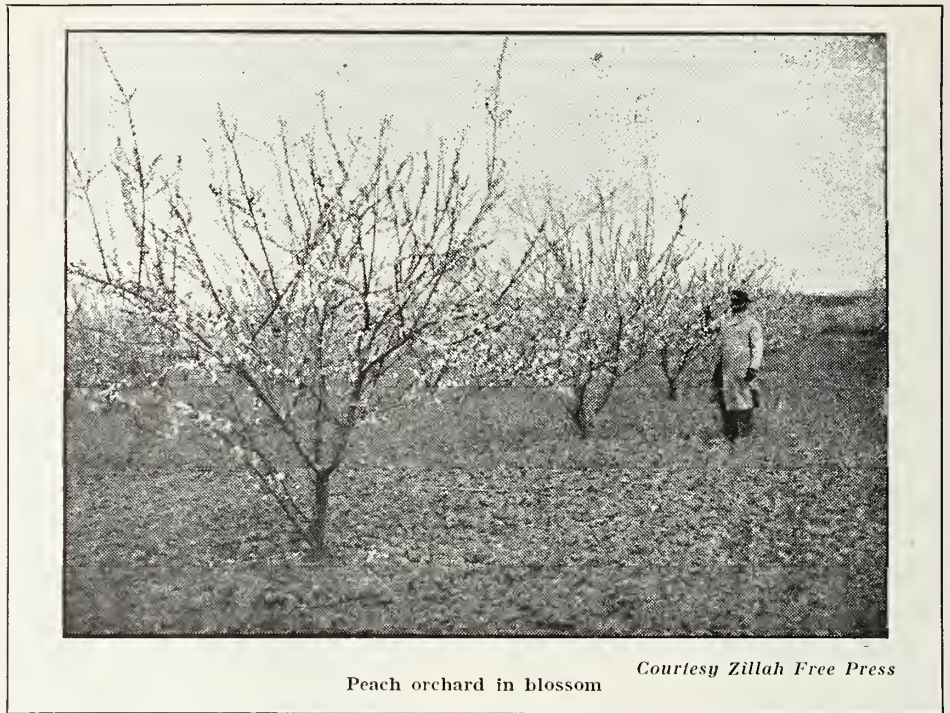
A well laden limb

*Courtesy Zillah Free Press*



other. Wherever we have exhibited, for example, we have tried to keep this thought in mind. So it happens that most of our money for exhibition purposes has been spent in the East and Middle West. There live the people who will create a demand for our land, and so raise the price of it; and there live most of our consumers. That this has had a reactive effect upon the character of our production cannot be questioned. As soon as the East began to understand that we were catering to their best trade they began demanding better fruit, and the growers have been more interested in the production of that class of fruit.

There are about four thousand acres of orchard, three years old and upward, in the Zillah district. There have been planted about two thousand acres more in the last three years. Of the old orchards about fifty per cent are seeded down to alfalfa, etc. Of the new orchards, especially those planted during the past two years, there has been a tendency away from "fillers," and intercropping is becoming less and less each year. How much this has had to do with the production of a class of fruit superlatively fine it would, of course, be hard to say. But there is a growing conviction among the growers that seeding down tends to a more regular production with such varieties as the Spitzenberg, and that infrequent irrigation tends to produce a deeper root growth and preserve from frost. A view of our district as a whole would disclose the following conditions: An earnest desire to know just what is the



Peach orchard in blossom

Courtesy Zillah Free Press

best; a determination to produce the best by taking pains in the small details of fruit growing; the intention to reach out as far as possible for the market in order that there may be as much room as possible for the consumption of the best; persistent endeavor to educate the prospective market, and such combination of interests as shall make in the largest way possible to the landing of a good fruit in a good way on a good market.

products, but the difference lies in the form of lead used, which may be either acetate or nitrate, the former producing the acid material, while the latter furnishes the neutral. An analysis of the two brands in dry form shows that the acid arsenate contains 64.26 per cent lead oxide, 33.15 per cent arsenious oxide and 2.59 per cent water, the neutral containing 74.40 per cent lead oxide and 25.60 per cent arsenious oxide. A comparison reveals the fact that the acid arsenate of lead contains a larger proportion of arsenic than the neutral, but it does not necessarily follow that it has greater poisoning efficiency. On the other hand, it has been conclusively proven that the ortho or neutral product stays in suspension

## Insecticide Information of Value to Fruit Growers

By A. J. Howe, Cleveland, Ohio

**W**HILE the fruitgrower is a large user of insecticides few are in possession of facts relative to their composition which will enable them to make a wise selection. As arsenic forms the active agent in nearly all insecticides, a few facts concerning it may be of interest. Arsenic as a poison was first recorded in history about the middle of the seventeenth century, when a number of young wives of Rome disposed of their husbands by a secret preparation. Since then its practical uses have materially increased, and it is now an important factor in glass making and in the manufacture of paints, pigments, medicines and insecticides. Arsenic, in its natural state, is found in different forms from which is made the commercial or commonly called white arsenic. Government statistics show that in 1907, 1,750 tons of arsenic oxide, having a value of \$163,000, were produced in this country, while foreign countries contributed in 1908 some 5,000 tons. This shows conclusively that by far the larger proportion of arsenic comes from abroad.

Paris green is perhaps the most widely used insecticide, having a large percentage of arsenic contents. It is made of boiling verdigris, a baser

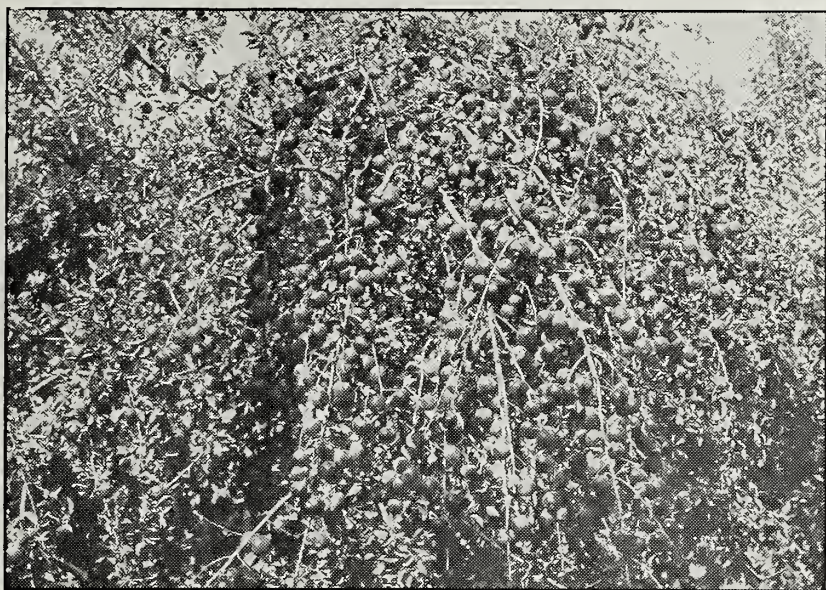
acetate of copper, with white arsenic, which, when strictly pure, makes a composition containing arsenic oxide 58.65 per cent, copper oxide 31.29 per cent and acetic acid 10.6 per cent; total 100 per cent. However, the latest government requirement specifies that a paris green must contain not less than 50 per cent of arsenious oxide, combined with copper, and not more than three and one-half per cent of water soluble arsenious oxide. Water soluble arsenic, if in excess causes foliage burning, and therefore a paris green containing more than three and one-half per cent should be avoided. Most of the state experiment stations publish, from time to time, an analysis of the standard makes, from which can be gathered information regarding the different brands now on the market.

In 1893 the Massachusetts Gypsy Moth Commission made a thorough test of arsenic of lead combating the gypsy moth, then very prevalent throughout the state. Exceptional results were obtained, which led to the adoption of that material as a permanent insecticide. There are two separate and distinct forms of arsenate of lead, one known as neutral and the other kind called the acid. Sodium arsenate is used in the making of both



Peach tree with top killed by San Jose scale





Nature's extravagance

Courtesy Zillah Free Press

longer when mixed with water. However, it might be well to mention that no arsenate of lead should be permitted to dry out, as it undergoes a certain change in makeup which is detrimental to its suspension qualities. If it is covered with water at all times it will keep in good condition indefinitely. In recent years the combination arsenate of lead and lime-sulphur spray has gained a wide distinction for being especially effective and economical. Test conducted with a neutral and acid arsenate of lead and lime-sulphur of standard strength shows that the neutral arsenate solution contains 24½ per cent of arsenious oxide and practically no soluble arsenic, whereas the acid solution contained 1.96 per cent free or soluble arsenic. In the latter case a dangerous amount. Here, again, the government has laid down certain rules governing the sale of arsenate of lead, and in 1910 enacted a law toward the standardizing of such materials. This took effect January 1, 1911, and specifies that an arsenate of lead must contain not less than 12½ per cent arsenic oxide and not more than 50 per cent water (unless so stated on the label), nor more than three-quarters of one per cent of soluble arsenic. No doubt this is having its effect, and fruitgrowers can feel well protected in buying the best commercial brands.

The composition of lime-sulphur is not at all complicated and is, as its name implies, a combination of lime and sulphur in liquid form. In certain sections of the country some growers attempt to boil their own, but the commercial preparation has so many advantages over the homemade that it is only a question of time when every grower will find it more convenient and practical to use the former kind. The dilute homemade lime-sulphur wash is made according to the old formula, which consists of twenty pounds of lime and fifteen pounds of

sulphur, boiled for about one hour in fifty gallons of water. This mixture, however, has many disadvantages. It is not sufficiently strong to be an effective killing agent against scale, must be used with warm water, corrodes the apparatus and is particularly mean to handle. The new 55-110-50 formula, while an improvement over the old, has the same defects slightly reduced. It costs considerably more, using these proportions of lime and sulphur, and seldom can be made at a strength over twenty-eight degrees Baume, which is five degrees lower than the standard commercial lime-sulphur. The average boiling plant costs somewhere in the neighborhood of thirty-five dollars, and it is necessary that certain parts of the outfit be reinstated frequently, due to the chemical action of the solution. The ingredients, figuring sulphur at \$2.75 per

hundred and lime at sixty cents per hundred, will cost \$3.30 for fifty gallons of the mixture. The addition of the cost of labor, outfit, fuel, hauling, etc., will easily bring the total cost of the homemade lime-sulphur to approximately \$4.50 for fifty gallons of the solution, which is considerably weaker than the commercial product. All considered, the grower who makes his own wash saves less than a cent a gallon, and this is certainly absorbed by the inconvenience in making and handling. The commercial product is very effective against San Jose and other scale, it can be used cold, does not crystallize unless exposed to the atmosphere and can be kept indefinitely. The commercial thirty-three degree solution will be found entirely satisfactory.

#### Editor Better Fruit:

In your last issue appears a copy of the agricultural college pamphlet on "Frost Fighting Studies in the Rogue River Valley." In this is given an account of what I did, or was supposed to have done, in fighting frost last season. As there are several errors in the account given by the college I would appreciate it if you would give me space for the following corrections: It was stated that "His trees being small, he found that he was unable to save the entire crop in that way. In fact around the outer edge and across one end of his orchard the fruit was almost entirely killed, and throughout the entire block a great many blossoms were injured. However, on a large per cent of the heated area enough fruit was saved to make a fair crop." This is entirely wrong, for I had the heaviest crop this year that the orchard has ever known. The Comice bore heavier and set better than at any time since it commenced to bear. There were about sixty trees in a lower corner, which was not smudged through an oversight, that lost all its crop; and around two sides which had been imperfectly heated the fruit was damaged, but not entirely killed. In fact my fight against "Jack Frost" was highly successful, and I only hope I never do any worse. Also the firing points of my alarm system are 32 and 30 degrees instead of 33 and 31. I always start to fire at 29 degrees instead of 30. I have taken a great deal of pride in the results of my frost fight, and it takes away a good deal of the "glory" when it is stated I had employed fifteen to eighteen men to handle the fires. The truth is that I had but four men employed, which I found entirely sufficient except on the first night's firing, when the wood was covered with snow and was wet. Then it was difficult to get them started, but on the other nights I had no trouble in keeping things going with only four men. I never employed over two or three in seasons previous to this. Very truly yours, A. C. Allen, Medford, Oregon.



Five-year-old Winesaps—E. Chenaar

Courtesy Zillah Free Press



# Top-Working Fruit Trees to Change to Better Varieties

By Professor W. H. Hicks, State University, Moscow, Idaho

COMMERCIAL fruit growing is attracting attention from parties with more or less capital from all parts of the country. This is especially true in Idaho, where such a large range of apple growing conditions are present. Localities that are now famous, or destined to become so, for their superior apples must confine themselves to the growing of a few varieties which are especially suited to local conditions. Each fruit country, then, must go through the necessary experimental stage in order to determine what varieties are best adapted to the conditions. Each fruit-grower will have to solve the problem in regard to disposing of his undesirable varieties. Shall they be removed or top-worked to better varieties? In some parts of our state can be found orchards of various ages which do not pay, and it is seen that something is wrong. The causes which are responsible for an unprofitable orchard may be stated as follows: (1) Unsuitable varieties, (2) poor drainage, (3) unfavorable site, (4) poor soil, (5) neglect, (6) unfavorable climatic conditions and old age. The problem or renovating an orchard or changing the variety is sometimes a large one, and often proves to be more or less expensive. The first and most important point to consider in studying an orchard of this kind is whether or not the trees are worth saving. When the trees are on wet land that cannot be sufficiently drained they should be removed instead of being top-worked. The fruit tree will not be profitable with excessive moisture about the root system. If the trees have been badly neglected for years and have gone to decay more or less they should not be top-worked. When environments are favorable and the tree possesses a good root system and trunk it is profitable to top-work to a standard commercial variety. Various systems of grafting a new top on old trees, or cutting them back severely and grow-

ing a new top, has long been practiced, and experience shows that if the work is properly done top-working brings quicker returns than replanting of young trees. Usually a fair crop of fruit is borne on a three or four-year-old top of a top-worked tree. It sometimes happens that worked-over trees form a more

for spraying, and learn thoroughly how and when to use them. It is not a difficult matter at the present stage of our horticultural development to get reliable information on spraying from your state board of horticulture, experiment station or successful practical growers. Every other tree in the row or every other row will probably have to be removed, for most of our orchards are planted too close. A thorough study of your orchard will soon determine which trees can be saved by skillful top-working or renovation of the top by severely cutting back and allowing adventitious buds to form a new growth.

In a majority of cases the old tree presents a hard appearance, for at the expiration of twenty years or more the uncared for tree is quite a study. Bear in mind that trees which show a poor growth along with other undesirable characters are seldom worth the time it takes to graft them. The yellow transparent stock very seldom grows a profitable tree when top-worked. The same may be said of a number of other varieties. When such unions are made they are not strong, and are easily broken in future years by weight of fruit or wind, or fail to make a satisfactory growth. The weaker and slower growing varieties as a rule are not satisfactory stock upon which to work other kinds. Trees of strong growing varieties in a good state of preservation, under favorable conditions, are worthy of top-working. If a tree is not top-worked prune it properly. Do not make the mistake of pruning too severely the first year, for it will invariably produce a large crop of watersprouts. It is best to prune lightly and regularly for a number of years until the tree is well thinned and well balanced. It may be that



Figure 2—It is not profitable to start an apple tree with such a high head when top-working. Cut off the original tree closer to the ground and work in lateral stubs

desirable top than the one naturally grown from nursery stock. However, the results secured in this manner are in proportion to the operator's ability as a tree grower. Top-working enables a weak growing variety to be placed on a stronger root system or trunk than its own. This practice is becoming popular in many sections of the United States where certain peculiar troubles affect some varieties. For example, the King is worked on Northern Spy stock in order to prevent collar rot and for its aphid resisting qualities. If a valuable tree should meet with an accident whereby part of the main limbs are lost it may be rebuilt by grafting or budding the top. New varieties may be tested by grafting or budding into bearing trees. Trees which should not be worked with are those with a high head, partially decayed trunk, under adverse environment, and in a general run down condition. The methods employed in renovating old trees are similar to those for the care of the young orchard. See that the trees have a general awakening and are started into growth in both fruit and wood. Probably the first thing to be done is to break up the sod and get the soil under cultivation. Feed the trees by applying barnyard manure or other fertilizers; this is essential for stimulating growth. Begin war on the insects and diseases by buying a good spray outfit with plenty of material

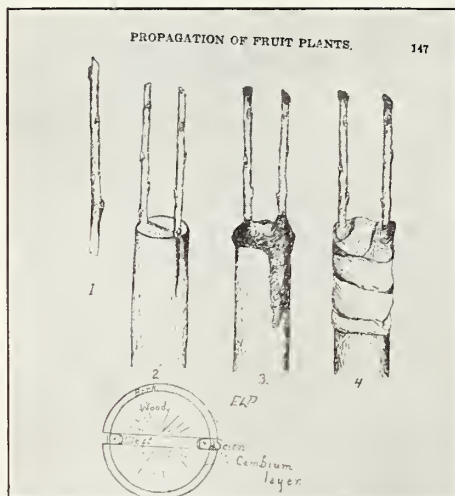


Figure 1—Cleft Graft. This is a simple and effective method to use in top-working fruit trees. After Green, S. B.



Figure 3—Note the placing of the scion in a lateral stub which is smaller and makes a better union than the older wood of the main limb. The two limbs on the right are the original





Figure 4—A Ben Davis apple tree successfully top-worked to Rome Beauty. The two large limbs marked 1 and 2 are Ben Davis, but will be removed this spring, as the scions can now take care of the food supply

you do not wish to keep the original varieties. If so, they may be changed by top-working. Only a study of the individual tree can determine the advisability of grafting to a new variety. We must not overlook the fact that it is difficult and expensive to prune, spray, thin and pick the fruit on high trees. To produce choice fruit at the minimum expense we must have conditions so that work can be conducted effectively and cheaply. Do not graft limbs that are over three or four inches in diameter, as young wood unites much better and makes superior growth. It may be impossible to find limbs of this size near enough the ground to enable a low-headed tree to be formed. Graft the smaller limbs of the tree in such a manner as to secure a well balanced head.

Some operators remove the entire top the first year and insert scions in all stubs which are favorably located and furnish young wood in which to work. This has proven a bad practice in the Pacific Northwest, where trees grow rapidly. The sap, which has been sent to the large leaf surface for being worked into various elements by the leaves, will collect at the end of each stub to such an extent that fermentation takes place, which prevents the cambium layer of the scion from uniting with the cambium layer of the stalk. This condition is commonly spoken of as "flooding the scion." This is especially true on trees ranging from three or four years of age and upward. The first aim of the top-worker in choosing stubs should be a desirable distribution of them which will form a balanced and shapely tree when the scions have grown. He should bear in mind the future tree. The limbs which are poorly distributed and not satisfactory for grafting upon should be left at least during the first growing season to take care of the surplus sap in order to prevent flooding of the scion.

The number of stubs to leave will vary according to the variety and must be determined by the man who is doing the work. A good general plan is to retain from three to five scaffold limbs when the work is being done on very young trees, or to cut away only enough limbs to set scions for a good top on older trees. Future pruning and training of the tree will take care of the limbs which are left. They should be removed. Judgment must be used in regard to the time the work is done and the amount of wood taken out each year. The working of too many stubs results in a dense top, which means more work for the pruner in future years. In our semi-arid districts where the sunlight is intense one must figure on leaving enough limbs and foliage to protect the stubs and trunk from sun-scald. The protection that the remaining limbs afford the scions from wind, sun and mechanical injuries, such as passing teams and machinery, should be considered. We naturally con-

for which to work. It is very discouraging, indeed, to carefully select the stubs and do the grafting, but get nothing for our labor but failure and disappointment. The writer has seen many nice trees carefully top-worked in all respects except the ideal time. One must study the conditions of his trees in early spring and do the work about the time the sap is moving and the buds are beginning to swell. This date cannot be determined by the calendar. While earlier setting of the scion may be practiced there is always danger of their drying before the cambium layers become united. Usually somewhere between March first and the first of April is a desirable period for top-working the apple. It is better to begin late than too early.

The Northwest orchardist has an excellent opportunity for improving the character of his plantation in the choosing of his scions. A few people throughout the country have long realized the striking difference and characteristics of individual plants. This fact has not been noticed, or at least has not been considered of practical importance, by a large class of fruit-growers and plant propagators. In studying individual trees in most any orchard of any variety in the Pacific Northwest one can usually find one or more trees which show a marked superiority to others in the orchard in growth, productivity, ability to withstand adverse conditions, size and quality of fruit. These facts are beginning to be noted by the most up-to-date nurserymen and men who are making horticulture their special line of work. We conclude that the most desirable propagating material for scions is to be secured from trees with the most desirable characteristics, and from the portion of the tree where the wood and buds have had the most favorable opportunity for development. There is now a company organized at Wenatchee, Washington, to keep a plant register, and its object is to record and keep an accurate pedigree of commercial fruit plants in order to improve the character of our commercial fruits. In this respect the plant men have been much behind the men in animal improvement. The wood used for the scions should be one year old, commonly



Figure 5—A satisfactory transformation of a Ben Davis apple tree to Rome Beauty. This change has been made for meeting the demands of the market

clude, then, that the inside limbs are best protected and make desirable limbs for grafting. One must be careful not to form a head too close in his endeavor to secure inside stubs. A large percentage of top-worked trees have a tendency to grow upright and must be watched carefully by the pruner each year in order to correct this. By leaving a scattering lot of limbs, for reasons mentioned above, one sometimes finds them very useful for working the second year in case the first year's work has not been entirely satisfactory or some of the scions met with accident. If the tree to be top-worked does not possess limbs young and small enough for working they can be severely cut back, which will bring forth a great wealth of young growth. This growth can be worked with very satisfactorily. In rare cases only it is advisable to work in this manner.

In most all orchard operations it is necessary to have some ideal or goal



Figure 6—A Ben Davis orchards near Moscow, Idaho, satisfactorily top-worked to Rome Beauty. This change has been made by the cleft method of grafting





The fruit of a pioneer

Courtesy Zillah Free Press

expressed as last year's growth. This should be strong and well matured. Do not choose that which is under or overgrown. Always avoid the watersprouts. Terminal shoots that have made a growth of from twelve to eighteen inches make good scions. The selector of scions should see that the buds are well developed and the internodes are uniform in length. The character of the terminal growth of a fruit bearing tree is indicative of the conditions prevailing throughout the growing period. Good results have been secured in some cases by cutting the scion wood in spring and immediately placing the same on the tree. A much better plan, however, is to gather the scion wood in the fall, shortly after the leaves have fallen, and store them over winter in some material like moss or sand. If scions are cut at this time and stored they avoid the fluctuations of temperature which our state experiences almost every year throughout the rest period of the tree. See that they are not kept excessively dry or moist. They should be kept in a dormant condition so they can be placed on the stock in time to unite with the same before drying out. Most any fruitgrower possesses a satisfactory place for storing scions, such as a cool corner of a cellar or in the ground on the north side of some building. Bury them from ten to fifteen inches deep. If the scions are left on the tree until spring and become active there is danger of their drying out when placed on the stock. On the other hand, when the scions have been kept dormant a partial union with the stock is effected before the buds are started by the warm weather usually existing at the grafting season. If scions are cut late in spring they sometimes grow leaves which sap their vitality before a sufficient union has been made with

the stock. In some cases this results in exhaustion of the scion and failure.

It may be said that graftage can be divided into three general headings, namely: Budding, scion grafting and in-arching. Each division has its own special advantages to the skilled propagator. It should be understood, however, that to draw close decisive lines of separation is somewhat difficult. Graftage can be performed at a wide range of time when the three forms are considered. For example, budding in early fall, winter grafting of nursery stock and spring grafting. There are many forms of uniting the scion or bud with the stock. Only the most practical ways need be considered here. These methods are shield budding and scion grafting. Budding and grafting are employed in practically all propagation of the better classes of tree fruit, as this method is the most satisfactory way to perpetuate the variety true to type.

Shield budding should be done in late summer while the sap is still active. Buds are inserted on well formed young wood which is desirable material for budding upon. In all propagation use only the best material. Having chosen a desirable place for inserting the bud, the operator then makes an incision in the bark at a right angle to the limb upon which he is working. The next cut is made at a right angle to the first. This gives a T-shaped incision. A bud is then inserted directly to the cambium layer of the stock under the bark. It is then tied with some soft material, such as cloth or woolen string. Minor details differ with nearly all operators and the kind of plant which is being budded. The essential point, however, in all cases is to have the cambium layer of the bark containing the bud in contact with the cambium layer of the stock. Shield budding, like most

other forms of budding, is principally and primarily used for the propagation of nursery stock. It is here mentioned in connection with top-working in case it is desired for establishing a limb at some particular point. After the bud is united, which varies from two to three weeks, the wrapping material should be removed.

Cleft grafting is a very simple and satisfactory method in most cases for top-working the fruit trees. Most orchardists will have their individual methods of removing the top of the tree and other practices of such a nature, but natural laws should be carefully followed for best results. Having chosen the limbs, as recommended previously, the operator should saw them off squarely, leaving a smooth, clean wound and stub. This stub is then split down the center from two to three inches with a grafting chisel. This will allow the insertion of two scions, but if the stub is more than three or four inches in diameter and four scions are desired, the cleft will necessarily be made near the margin of the limb and parallel. After the chisel has been removed open the cleft with the wedge on the back of the chisel or one made especially for this purpose. The scion, having been cut to contain three or four buds with as much cambium layer exposed at the base as possible, is then placed in the open cleft and the wedge removed.

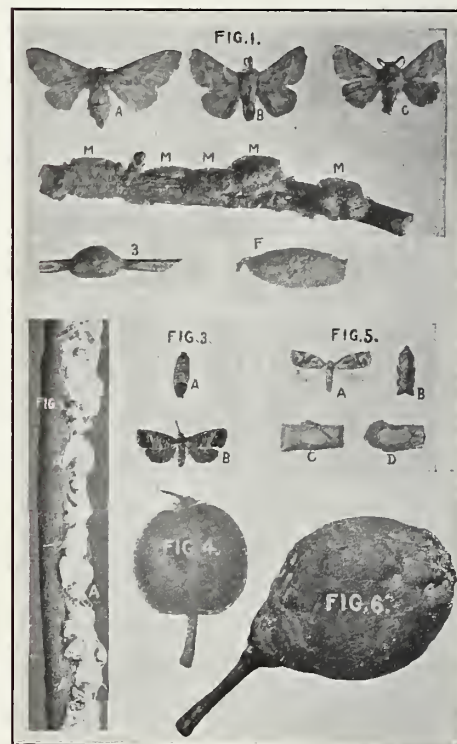


Figure 1—Western Tent Caterpillar: a, Female moth; b, c, males; mm, apple twig with egg masses; f, cocoon; 3, egg masses of American tent caterpillar, life size. Figure 2—Cottony Maple Scale: a, Scales mostly hidden by secretion, life size. Figure 3—Codling moth: a, Wings closed; b, open, enlarged about one-fourth. Figure 4—Apple showing white egg of codling moth (under letter f), life size. Figure 5—Fruit Tree Leaf Roller: a, Moth, wings open; b, closed; c, d, egg patches, hatched; all life size. Figure 6—Pear with Howard's Seale: The young appear as minute white specks; life size. Figures from photographs by the author. Photographs by C. P. Gillette, Fort Collins, Colorado





The Bean Spray Pump Company, San Jose, California, adopted a very novel method of demonstrating their spray outfits by rigging up a complete sprayer on an automobile, which enabled them to go quickly from orchard to orchard and give a practical demonstration—a very original stunt

The lower end of the scion is trimmed in the shape of a wedge, leaving the first bud slightly below the point where the incision begins. The edge of the wedge opposite this bud should be somewhat thinner. In placing the scion in the cleft see that the lower bud is to the outside and slightly below the top of the cleft. The point of vital importance is to get the cambium layer of the scion in contact with the cambium layer of the stock. This is important, as it is this tissue in both the stock and scion which has the power of uniting. As a general rule only a short practice is necessary to familiarize the operator with the proper location of the scion on the stock. The inexperienced grafter is apt to set the outer bark of the scion flush with the outer bark of the stock. Upon careful examination it is found that the bark of the stock is more or less thick and the small, narrow scion is in contact with barked tissue. The cambium layer is found on the outside of the wood cells and on the extreme inner surface of the bark. This is true of both the stock and the scion. After the scion or scions have been properly set in each cleft remove the wedge. The scion will be held firmly in place. The last operation in cleft grafting is waxing all cut surfaces, including the tip of the scion. The operator should see that the stub is thoroughly covered between the scions and the incision and both sides waxed as far as they extend. This is very important. It prevents the action of the elements from interfering with the union of scion and stock. As the scions unite and continue to grow the orchardist should keep close watch to see that the weaker, undesirable ones are removed before they cause injury to those which are intended to remain. It sometimes happens that when two scions are allowed to grow on a small stub one will split off, which will leave

a wound almost impossible to repair and thus undermine the health of the tree. If the most desirable scion is left union will take place so perfectly that, under ordinary conditions, little trouble will be experienced along this line.

**Inlaying or kerf grafting:** In the Pacific Northwest, where our trees make an exceptionally rapid growth, the wood is more brittle than trees grown in colder climates. Many operators in top-working trees may find this method advantageous. It consists in sawing off the limb in the same manner as for cleft grafting. A V-shaped cut is made in the edge of the stub and a scion cut with the the same shape, so the cambium layer will come in contact on both scion and stub. By this method one can place several more scions around the stub, which increases his chances of success. When this work is properly done the scions unite and make a satisfactory union. A little practice will enable one to do this work quite rapidly. It is thought by some that this method is to be especially used for working stone fruits and trees that grow more rapidly and more brittle than the pear or apple.

**Whip or tongue grafting:** This method is used much more in top-working young trees where the stubs are very small and not satisfactory for working by the preceding methods. This method is somewhat more difficult for the operator, but gives very satisfactory results after the union is perfected. It consists in making a long slanting cut across the stock. The knife is then used to make a cut down the stock near and parallel with the center. A similar cut and cleft is made on the lower end of the scion, which should carry from two to three buds. It is not necessary to have the scion of the same diameter as the stock—in fact very rarely will such a condition

exist in top-working young trees. The most essential point (the same as that in other methods) is to get the cambium layer of the scion in contact with that of the stock. A skillful operator usually has no trouble in securing a large surface of cambium layer for placing in contact by this method. Some growers, however, do not like this method, as the scion is not so securely held and is more liable to be moved or lost by the action of wind and birds. After the scion has been properly placed all cut surfaces should be carefully waxed.

There are several ways of making a good grafting wax. If one is working out doors in early spring while the weather is cold he should not attempt to use those waxes which are applied cold. The writer has found the following formula to make a grafting wax quite satisfactory for general use: One-third resin, one-third beeswax, one-third beef tallow. The ingredients are put together in a vessel and thoroughly heated until all are united. The mixture is then allowed to cool and applied at a temperature which will not injure the plant cells. This wax will harden to such a degree that it cannot be used until reheated. It is then necessary to use a grafting pot. In this case the wax can be made soft and pliable. This wax is very adhesive and gives satisfactory results. The only danger is found in applying while too hot. The following waxes are recommended by Professor L. H. Bailey of Cornell University. They have been found to be satisfactory: (1) Resin, four parts by weight; beeswax, two parts; tallow, one part. (2) Resin, sixty-one pounds; beeswax, one pound, and from one-half to one pint linseed oil; melt together gradually and throw into water and pull. The linseed oil should be entirely free from cotton seed oil. This is a hard wax for use in warm weather.

**To make wax string and cloth:** In a vessel of melted wax place a ball of soft cord, such as number eighteen or twenty knitting cotton. See that these are frequently immersed in the liquid in order to secure thorough saturation. When they have absorbed all the wax possible they are then taken out and laid away for future use. Wax cloth can easily be made by saturating muslin or some cheap cloth like calico in melted wax. This can be wrapped on a small board and immersed in the melted liquid or spread out and the wax spread on with a brush. The operator will find it very convenient to keep this wax cloth or string wrapped in balls or on sticks to facilitate handling.

Almost the whole world knows of Hood River as a place that produces the best fruits, and all of Hood River Valley should know, and could know, that there is one place in Hood River, under the firm name of R. B. Bragg & Co., where the people can depend on getting most reliable dry goods, clothing, shoes and groceries at the most reasonable prices that are possible. Try it.





Figure 1—Logged-off land cleared of stumps in winter and sowed to oats in spring. Estimated crop 75 bushels per acre

## Wenatchee Valley Where Apple is King

From Wenatchee (Washington) Republic

APPLE is king in the Wenatchee Valley, as all the world knows. There was a time when the first settler built his humble cabin in the then sagebrush wilderness. Then it was a problem as to what soil could produce, and the further problem as to what to do with the product if crops were or could be grown. Just why pioneers of the Wenatchee Valley, and in fact of the "Great American Desert," chose to make settlement on the lands is a question perhaps best answered as the "American Unrest." The earliest settlers suffered hardships with a stoicism little short of heroic, and to their early efforts the present day settler is deeply indebted for pointing the way. Primitive agriculture was followed by better development as means was found, and with the coming of the Great Northern Railroad the Wenatchee country received its first great impetus to the development which has followed. Grains, grasses and fruit had been successfully raised, and there were those among the early settlers who realized the superiority of the soil for advanced culture. Small settlements had sprung up at various favorable points, among which was Wenatchee, an important trading point of several families at the time the railroad was built. The development of land cultivation had advanced sufficiently to create much discussion of large irrigation works. Of course, some crude ditches had been constructed by ranchers, and the old-fashioned water wheel served to divert the waters of the Columbia as well as tributary streams to small clearings. Market conditions improving, stock raising chiefly, the growing of corn, wheat, oats and other grains, the enlargement of hay meadows, the planting of gardens, and incidentally fruit trees and shrubbery, gave the valley an appearance of value for agriculture.

Land values showed little tendency to increase, however, and the ranchers for the most part had to content themselves with what today would be a meager income for the acres tilled. There were those who, previous to the advent of the railroad, realized the possibilities of the valley for horticulture, but at the time there was no one to

take the initiative, and, indeed, distance and cost of getting to market would have proved almost insurmountable difficulties. The time came when conditions were ripe and the value of Wenatchee Valley soil and climate for apples and other fruits was heralded to the world. Then commenced an unbroken period of progress. Acre after acre was devoted to fruit—apples, apples everywhere. Mistakes made in the early planting of trees, though costly, were remedied, and as the fruit industry increased in volume better scientific methods of cultivation followed until today no fruit producing section can be said to be the peer of the Wenatchee district. While apple is king, and will continue to be the chief fruit product of the valley, other fruits, such as pears, cherries, plums, apricots, prunes, strawberries, raspberries, dewberries, blackberries, loganberries, in fact an almost endless list, thrive and produce abundantly. Recently the English walnut has received attention, and the product of young trees shows soil and climate adapted to the industry.

Practically the development of the valley has been accomplished within the past sixteen years, and as before stated, but a small portion has been brought under cultivation. Population has increased enormously, keeping pace with advancing soil cultivation. With each year of progress in the number of acres brought in cultivation has come a more insistent demand for the products of the valley, and where a few thousand dollars served to handle the crops fifteen years ago millions of dollars were required in 1911. Where some years ago a few cars carried market offerings, in 1911 trainload after trainload, until 2,500 cars had been filled, were required to transport the apples and other fruit of the valley to the markets of the world, for so famous for flavor and quality have the fruits of the district become that not only are the nearby markets demanding a portion, but the export demand cannot be filled, and fancy prices are gladly paid for the privilege of getting the product. It is not a case of begging a market, but the reverse.

Extraordinary efforts have been put forth in recent years to bring the acreage in bearing up to somewhere near the demand, but with each year the demand seems to increase so much greater in proportion to production that none are so pessimistic as to believe the demand can be supplied. Quality and flavor, due to favored soil, climatic conditions and scientific care, have to do with the demand, which can never be wrested from the Wenatchee Valley. Therefore, the homeseeker who desires to locate under most favored conditions, where climate, soil and market blend to form the ideal, is invited to join the thousands of people already here and happily contented. They do not in any manner feel the pinch of suffering of the crowded center, nor have to risk the contamination of surrounding vice.



Figure 2—Stump pasture land



# Cost of Clearing Logged-Off Land in the Pacific Northwest

By Harry Thompson, United States Department Agriculture

**T**HE rapid decrease of merchantable timber and the consequent increasing acreage of logged-off land have brought to the attention of the people of the Pacific Northwest the importance of the agricultural development of this section of the United States. In order to make this land suitable for agricultural purposes it must be cleared for the plow. To do this the standing timber, the logs, the underbrush and the stumps must be removed. (See Figure 1.) A preliminary investigation of the situation was made during the summer of 1908 to determine the extent of the logged-off land, the methods in use at the present time, and as nearly as possible the cost of clearing by the different methods used. No experiments were undertaken, and consequently no definite figures can be given in regard to the cost of clearing by the different methods in use except as given by contractors and owners who had kept the cost of clearing separate from other expenses. The territory covered in this investigation embraces Western Washington, Northern California and Western Oregon.

In the State of Washington the eighteen counties west of the Cascade Mountains have a total area of 8,700,000 acres of assessed land, as given by the various assessors of the respective counties. Of this 429,000 acres are in cultivation or improved pasture, 5,034,000 acres in standing merchantable timber and 2,352,000 in logged-off land. From this it will be seen that twenty-seven per cent of the total acreage is logged-off land and that the acreage in cultivation, much of which is pasture land from which the large stumps have not been removed (Figure 2), is only five per cent of the whole area. Table I shows the acreages for each of these eighteen counties. The timber lands in Western Oregon and Northern California are not nearly so accessible as are those of Western Washington. Neither is there nearly so much logged-off land, nor is this land so well adapted for agricultural purposes as that in Washington. While the demand for farm land in Oregon and California is well supplied by prairie and easily cleared brush land, the necessity for reclaiming the logged-off land in these states is not pressing. On the other hand, Western Washington has but few valleys that were not heavily timbered at one time, and the demand for agricultural products far exceeds the local supply. Consequently the demand for farm land and the idle wastes of cut-over land has brought the question of clearing this land squarely before the people. The character of the clearing ranges from the heavily timbered spruce and cedar low lands through the benches and side hills covered with fir stumps and a dense growth of underbrush to the more sparsely covered hemlock ridges.

The spruce stump is thought to be the most expensive to remove owing to the fact that it is found only on the deepest soil, where it roots deeply, often requiring a box (fifty pounds) of stumping powder to loosen a single stump five feet in diameter. The fir stump is the predominating stump of all logged-off lands in Washington and Oregon, and is removed by various methods described below. The cedar grows to some extent wherever the fir is found and predominates on low ground. All of the above trees have lateral root systems and do not root deeply except in loose or sandy soil, where the roots penetrate to a depth of several feet. On flooded or swampy land the roots are often partly above the surface.

In the logged-off lands of the redwood district of Northern California there has been little effort made to clear the land for agricultural purposes, since prairie land is plentiful and the logged-off land is rough and hilly. Some attempts have been made to clear the land of everything but the stumps and then to seed to orchard grass for cattle range. This work of clearing has been done for ten dollars per acre. This method of making range has proved a failure in most cases, as the great quantity of brush and the sucker growth of the redwood stumps have almost entirely covered the ground in two or three years. It is estimated that the logged-off land of California can be reclaimed at about the same expense as the fir stump land of Oregon and Washington. Most of the clearing that has been done in

Oregon was done by cheap labor until recent years. The donkey-engine method has been used in some sections of the state recently.

Until recent years all clearing was almost wholly done by what is now known as the "by hand" method, where the farmer, equipped with peavey, mattock, shovel and axe, undertook to put under cultivation the logger's stubble field. By this method the standing trees and brush were slashed, generally during the summer months. Then in September or October, after the first rainfall or when there was no danger to neighboring improvements or timber, a fire was started and allowed to burn over the entire slashing, when most of the brush and small logs were burned completely. The remaining logs were sawed into convenient lengths, piled and burned. After the rains had softened the ground sufficiently the smaller stumps and roots were grubbed and pulled out. Often a stump puller of the capstan type was used in pulling the smaller stumps after they had been loosened by digging around them. This type of stump puller is often used in clearing small tracts after the stumps have been broken into several pieces and loosened by the use of stumping powder, without which no clearing is undertaken in the present day. The stump puller should be of simple construction and strongly built. It generally consists of a drum, a wire cable and a sweep to which a team is hitched. Powder has been used in all clearing operations for several years, and all methods, except that of burn-

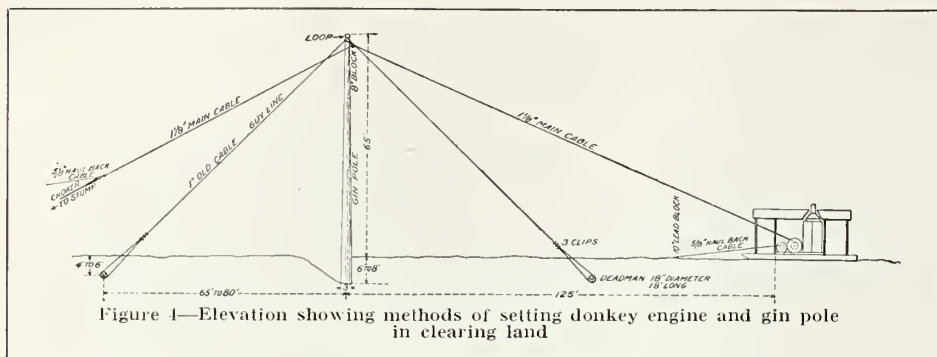
ing the stumps below the plow, are dependent upon it to loosen the stumps so that they may be taken out. It is said that a cheap explosive that would do this work would go a long way toward solving the problem of reclaiming the logged-off land.

Some six or seven years ago, when logs were down in the market and many logging outfits were idle, an enterprising logger took a contract for pulling the stumps from a meadow. He conceived the idea of using his donkey engine with its outfit of blocks and cables to pull and pile the stumps for burning (See Figure 3). Since that time many such outfits have been engaged with varying success in clearing land. The usual method is to slash and burn over the tract to be cleared, in order to burn all the underbrush and as many small logs as possible. Then all the stumps more than one foot in diameter are split and loosened by a



Figure 3—Pulling a stump with a donkey engine





charge of stumping powder of from five to twenty sticks, according to size of the stump. A charge of twenty one and one-half-inch by eight-inch sticks will generally split a five-foot stump into five pieces and loosen it so that an engine can pull the pieces from the ground. A gin pole is now set in the center of a tract of eight or ten acres and held in place by four guy lines from the top. (See Figure 4.) This pole should be sixty feet or more above the ground. A block is fixed securely near the top of the gin pole, through which is passed the main cable from the engine. This cable has the usual hook, ring and swivels at the end, and is usually one inch or one and one-eighth-inch in diameter. The haul-back cable, which is usually five-eighths-inch in diameter, is now taken to a lead block and passed around three sides of one-fourth of the tract to be cleared at this setting of the gin pole (see Figure 5) and the end hooked into the ring of the main cable, thus forming an endless cable with the engine—one that will run in either direction to or from the gin pole. In some cases, where the engine is built with the haul-back cable drum above the main cable drum, it is better to fasten the block for the main cable about five feet from the top of the pole and run the haul-back cable through a block on top of the pole. The haul-back drum is usually geared to run much faster than the main cable drum. Each outfit should have on hand at least four chokers and a supply of lead lines and extra blocks. A choker is a section of cable from twenty to thirty feet in length with a loop in one end and a choker hook on the other. The choker is passed around the stump and hooked upon itself. The loop is then caught in the hook of the main cable and the load is ready to go to the pile. While this load is going to the pile another is made ready, so that there is no time lost. When the cable returns with the empty choker it is loosened and another hooked into its place. As the loads come to the gin pole they are piled around it as closely as possible (Figure 6) by a man on the pile. This method, while an economic success in the hands of a few, has proved a costly method of clearing as handled by many others. If everything is handled to advantage by capable, experienced men this method has many

points to its credit over any other method of clearing now in use, the greatest of which is the saving of time. It is also cheaper than the "by hand" methods on large tracts of heavy clearing. The question of using a large or small donkey engine has been discussed, but those who have been most successful in clearing are generally in favor of an engine with sufficient power to take all roots out with a straight pull, avoiding the use of blocks. A nine by ten-inch compound gear or ten by twelve-inch single gear are said to be the best sizes for this work.

The first method of burning out fir stumps described below has been used by almost all farmers and others who have done any clearing in a small way. This method consists of boring two intersecting holes (see Figure 7) in the stump and starting a fire at the point of intersection by putting coals of fire or a piece of iron heated to a

white heat into the upper auger hole. A window weight with a wire fastened in the eye makes a good iron for this purpose, as it can be taken out and used again and again. After firing the stump will not require any attention until the portion shown in Figure 7A is burned out, as the pitch in the stump and the draft of the air through the holes will keep the fire burning. After the upper portion of the stump has been burned away the fire may be kept up by throwing in the bark and litter that are always to be found near by. By this means the main part of the stump is burned away, leaving the stringers with their small roots. These may be pulled out by a team or with a stump puller, or they may be entirely burned by digging away the earth and rolling a small log alongside of the root. This leaves but few small roots to be grubbed out by hand. By this method the soil is but little disturbed, the sub-soil is not scattered over the surface and the ashes are left where most needed. This method requires less leveling than where holes are made by the use of powder. It is said that one man can burn out thirty large stumps a week by this method, and can cut up and pile the logs near by at the same time. Another method of burning out stumps is to split the stump with a small charge of powder, which nearly always makes a large hole underneath and around the stump. This hole is then filled with kindling and other wood and fired. Of the remaining roots

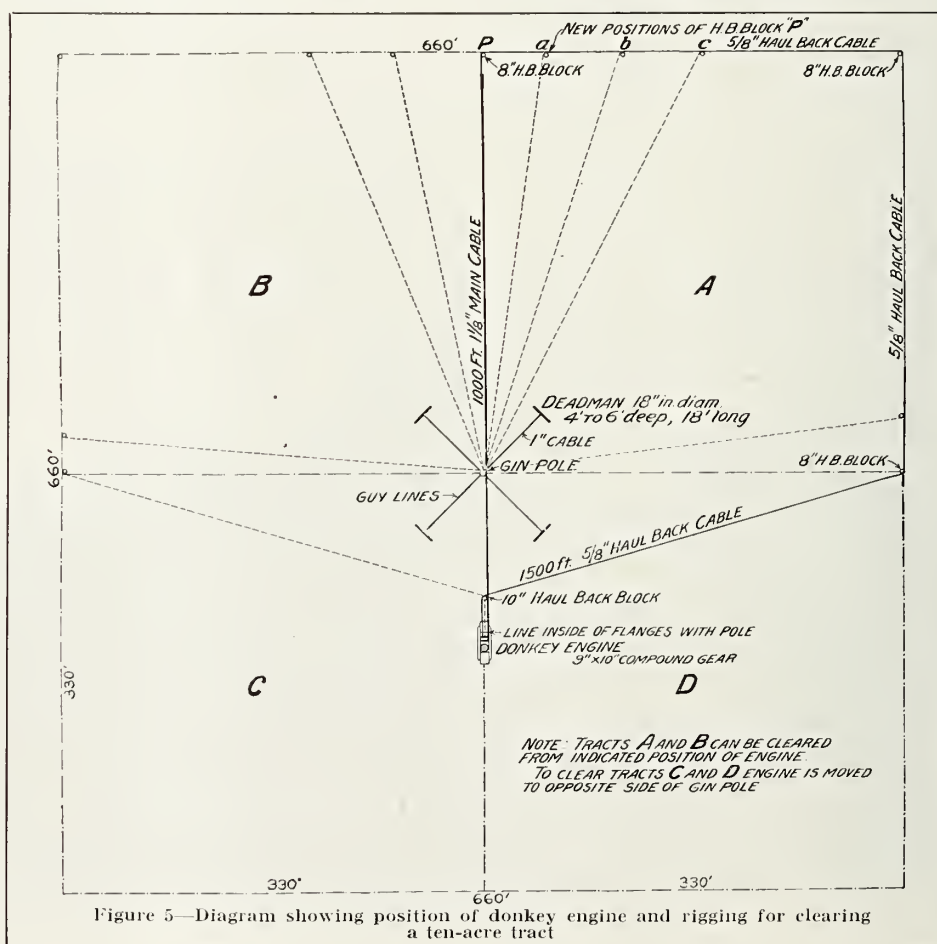






Figure 6—Stumps piled around gin pole in clearing with donkey engine

those that lie near the surface are grubbed out, while the others are cut off to a depth of from twelve to eighteen inches below the surface.

Charcoaling or pitting stumps, as it is called, is a method of burning out stumps that has been little used, but where tried has proved very efficient. The bark should be removed from the stumps in the spring or early summer to allow the outside of the stump to become thoroughly dry. Often it is well to dig a trench around, or to level the ground near the stump; then a ring of wood is stood or piled closely about the stump to a height of two feet and one foot thick (see Figure 8). Dry rotten wood or bark, such as is found in abundance on any new land, will answer the purpose. This is then completely covered with sod to a depth of several inches, except a small space on the side the wind is blowing against. Where no sod is to be found the wood can first be covered with a layer of bark, small brush or ferns to keep the loose earth from sifting through. Fine kindling is placed in the open space and fire started and allowed to burn openly until the ring of wood is well afire, then a piece of bark or a bunch of ferns or grass is thrown over the hole and the sod covering completed. The stump must now be closely watched and the fire not allowed to burn through the covering, more sod being added as needed. The whole secret of burning the stump completely is to keep the covering intact. If the roots are kept well covered and are re-covered as soon as the earth caves, exposing them to the air, they will burn out completely. This method is very economical for large stumps. Small stumps can be grubbed or pulled out to better advantage. After ten days it will be found that the stumps require very little attention. The cost of this method of removing stumps is said to be two dollars each. The disadvantage of using this method is the time it takes, as it requires sev-

eral weeks for a large stump to burn out completely.

The treatment of stumps by boring holes into the top and filling them with a strong solution of saltpeter and after six months or a year saturating the stump with coal oil and setting fire to it, when it is supposed to burn to the smallest root, has never been tried to any extent. Mr. K. O. Walders of Hamilton, Washington, writes of this method, but does not say to what extent he has used it. He also recommends the use of a strong solution of vitriol to deaden cottonwood, maple and alder stumps and prevent sprouting. On large fir, spruce and hemlock stumps, Mr. Walder's method is to bore four deep holes and pour an equal amount of nitric and of sulphuric acid into each hole. The holes are then tightly plugged. In a year the stump is permeated with the acids and can be fired in the dry season. No results obtained from the use of this method are given.

A machine used for burning stumps consists of a gasoline engine, a blower, a distributor and several lengths of hose with short lengths of pipe on one end. The air from the blower is divided into twelve or sixteen equal parts by the distributor, to which are connected the several lengths of hose, some of which are long and some

short. A hole is bored in the stump at the ground line or, better still, the earth is dug away and the hole bored from six to twelve inches below the surface. A piece of iron heated to a white heat is then dropped into the hole and a blast of air turned upon it by inserting a pipe attached to the end of the hose, which is of less diameter than the hole bored in the stump. The large diameter of the hole permits the gases to escape. As many stumps can be burned at the same time as there are lengths of hose, or two or more lines of hose can be used on the same stump. This machine is still in the experimental stage. A few have been successful in operating it, while others have pronounced it a failure. It is thought that if this machine is perfected it will be a cheap and economical method of destroying stumps. Mr. F. I. Mead of Tacoma, Washington, says that by using this machine he has been able to do heavy clearing for \$50 per acre. Mr. J. H. Davis of Georgetown, Washington, has used this machine in the clearing forty-six acres that averaged forty stumps per acre at a cost of \$65 per acre.

At the present time few undertake to clear even a small tract of land without the use of powder, and in the hands of an experienced man powder can be made to do a large amount of work at comparatively small expense. The powder in general use at the present time is known as stumping powder and is put up in sticks of one and one-half by eight inches, about sixty-five of which come in a box of fifty pounds. This powder costs at the present retail price \$6.25 a box; in ton lots \$5.25 a box. The charge of powder is placed as nearly as possible beneath the center of the stump. The powder should be placed on the hardpan if the soil is not too deep, otherwise it is placed from two to three feet below the surface. To get the best results the sticks are removed from the paper wrappers and packed closely together in the hole beneath the stump. This cannot be done in wet places. The powder works best when the temperature is about 70 degrees Fahrenheit. This powder has more effect when the soil is saturated with water. The wrappers are allowed to remain upon the sticks in wet places. The following charges will be found effective under average ground conditions and where using stump

pullers or blocks and teams: Stumps of a diameter of 18 inches, 5 sticks; 24 inches, 7 sticks; 30 inches, 10 sticks; 36 inches, 20 sticks; 48 inches, 35 sticks; 60 inches, 50 sticks; 72 inches, 65 sticks. Where the soil is sandy and loose it will require one-half more powder for the same size stump. As this powder does not work well at a temperature below 70 degrees Fahrenheit it is necessary when using it in cold weather to keep it warm by some method. Some bury the

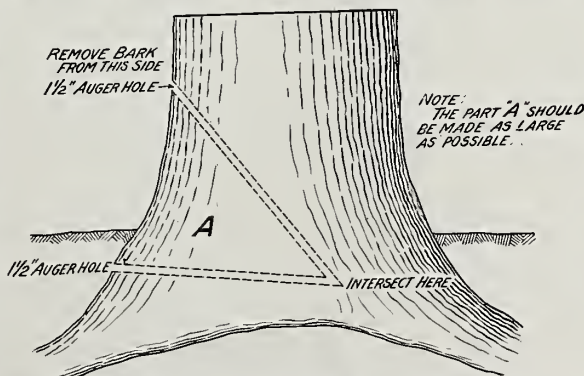


Figure 7—Diagram showing method of preparing a stump for burning



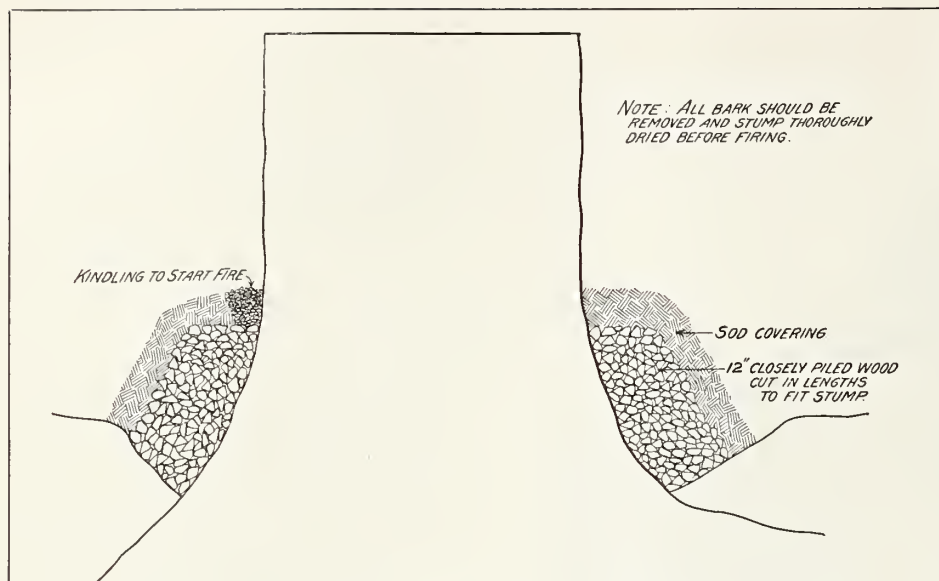


Figure 8—Diagram showing method of charcoaling or pitting stumps

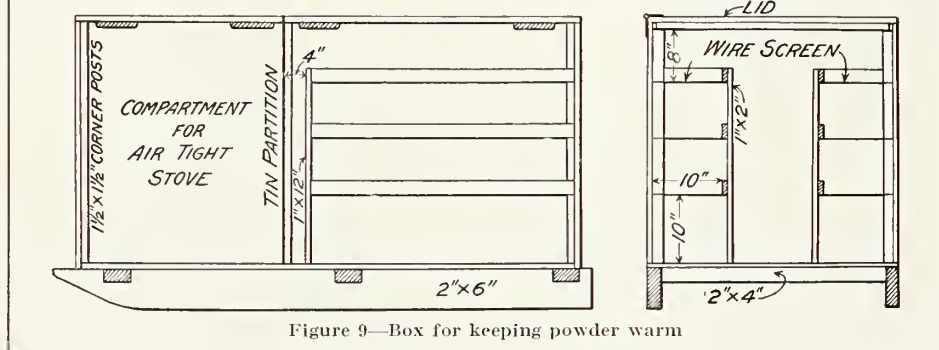


Figure 9—Box for keeping powder warm

boxes in a manure pile, others lay it upon a perforated rack over boiling water. As in either of these methods the powder becomes more or less damp from the vapor it is thought that when dry heat is applied better results are obtained. Charles Shirk of Bellingham, Washington, has used a box similar to the one shown in the illustration (Figure 9) for heating powder and thinks his is the best method to use for this purpose. This box is built upon a sled and has a tin partition, on one side of which is placed a small air-tight heating stove, while on the other are shelves of wire screen on which the sticks of powder are loosely laid. The box shown in the illustration will hold 100 pounds of powder, and it may be kept at the desired temperature in the coldest weather. It is well to employ a powder man who has had experience in blowing out stumps, as the saving in powder alone will more than pay his wages.

Table II, a statement of stumping done by the Narrows Land Company of Tacoma, Washington, for six months in 1907 will give an idea of the cost of the different items of material used and the labor in blasting stumps. The average cost of the removal of each stump was powder, 49.76 cents; fuse, 2.37 cents; caps, 0.87 cents; labor, 30.66 cents; total, 83.66 cents. The average cost of the materials used was as follows: Powder, per pound, 8 cents; fuse, per 100 feet, 43 cents; caps, per 100, 65 cents.

It has been a difficult matter to get definite figures on the cost of clearing land by the different methods in use, chiefly because the farmers or those

who have cleared land have not kept detailed records. Often the cost cannot be determined because included with other work. Table III shows the cost given by the owner or contractor of clearing land by the various methods described; also the quantity of powder used and the kind of land cleared. From this table of the cost of clearing land it will be seen that it is only very rich land, or that which is near the centers of population that will at the present time pay interest on the capital invested to put it under cultivation. Better returns from other forms of investment have kept capitalists from forming companies to clear these logged-off lands. It will readily be seen that this would require a large capitalization, as the average farmer could only pay for the clearing of his land in small installments. It has been suggested that the state or county working under a law similar to the one under which bonds are issued for draining land, whereby a part of the bonds and the interest are paid each year by the small annual payments of the owners benefited, might aid in this work of reclaiming these wastes. Where there are several owners of land in the same vicinity who desire to clear land they could do much by forming a co-operative company to buy machinery and powder and hire the experienced help needed. All those who have cleared logged-off land are united in saying that there is a great deal learned in connection with the first tract of land cleared and are convinced that they could clear the second tract very much cheaper.

TABLE III.—COST OF CLEARING LAND BY VARIOUS METHODS

Owner	Address	Method	Number of Acres	Kind of Land
N. E. Ryther	Riverton, Wash.	Powder, stump puller	2	Bench land
Chas. Rheinhardt	Seattle, Wash.	Powder, stump puller	2	Low land
Seaboard Sec. Co.	Seattle, Wash.	Powder, stump puller	35	Bench land
J. Burg	Foster, Wash.	Powder and team	10	High land
A. J. Erickson	Foster, Wash.	Powder and burning	2	High land
A. J. Erickson	Tacoma, Wash.	Powder and grubbing	2	High land
B. F. Allison	Midland, Wash.	Donkey engine	40	High land
Far West Lumber Co.	Tacoma, Wash.	Donkey engine	100	High land
Narrows Land Co.	Tacoma, Wash.	Donkey engine	5	High land
Arcadia Irrig. Assn.	Spokane, Wash.	Donkey engine and stump puller	1,000	High land
J. E. Larkin	Lake Bay, Wash.	Donkey engine	50	High and low land
Otto Wood	Marysville, Wash.	Donkey engine	5	High land
C. H. Quast	Getchell, Wash.	Donkey engine	7	Low land
L. Johnson	Stanwood, Wash.	Donkey engine	12	Low land
Mr. Colvin	Mt. Vernon, Wash.	Donkey engine	23	Valley land
Mr. Willis	Mt. Vernon, Wash.	Donkey engine	20	Valley land
M. Doran	Bow, Wash.	Donkey engine	12	Valley land
M. Doran	Bow, Wash.	Donkey engine	24	Valley land
L. Eckman	Mt. Vernon, Wash.	Donkey engine	12	Valley land
B. B. I. Co.	Bellingham, Wash.	Donkey engine	20	High land
B. B. I. Co.	Bellingham, Wash.	Donkey engine	67	High land
Lake Whatcom Logging Co.	Bellingham, Wash.	Donkey engine	10	Bench land
Ed. Bardon	Bellingham, Wash.	Donkey engine	20	Valley land
Peterson Bros.	Kenmore, Wash.	Donkey engine	40	Bench land
R. Kinnear	Fall City, Wash.	Donkey engine	10	Bench land
R. Kinnear	Fall City, Wash.	Powder and team	4	Bench clay
Robert Chabot	Moclips, Wash.	Powder and grubbing	10	Bench clay
C. Mankowski	Aberdeen, Wash.	Powder and grubbing	1.4	Low bench
W. G. Hopkins	Aberdeen, Wash.	Donkey engine	700	Valley land
W. G. Hopkins	Aberdeen, Wash.	Donkey engine	300	Bench land
E. S. Avey	Elma, Wash.	Powder and grubbing	11	Valley land
E. S. Avey	Elma, Wash.	Powder and grubbing	1	High land
F. C. Dunham	Elma, Wash.	Powder and grubbing	5	Bench land
F. C. Dunham	Elma, Wash.	Powder and grubbing	1	Bench land
William Harding	Elma, Wash.	Grubbing	5	Bench land
George Simpson	Elma, Wash.	Grubbing and team	25	Valley land
A. S. Caton	Olympia, Wash.	Donkey engine	35	High land
George Uhler	Olympia, Wash.	Powder, stump puller	6	Bench land
H. H. Tilley	Centralia, Wash.	Powder, stump puller	13.5	High land
J. H. Davis	Georgetown, Wash.	Stump burning machine	46.7	High land
W. B. Alderman	Tillamook, Oregon	Donkey engine	9	Valley land
Christensen & Co.	Tillamook, Oregon	Donkey engine	1	Valley land
Bagley & Streets	Woodville, Oregon	Donkey engine	80	Bench land
M. Harvey	Charleston, Wash.	Powder and team	2	Bench land
M. Harvey	Charleston, Wash.	Powder and team	17	Bench land



Owner	Pounds of Powder	Cost of Labor	Cost per Acre	Remarks
N. E. Ryther			\$200.00	
Charles Rheinhart	350		200.00	Many large cedar stumps
Seaboard Sec. Co.			125.00	Contract
J. Burg	2,000		120.00	
A. J. Erickson	50		100.00	Own time estimated
A. J. Erickson			112.00	Contract
B. F. Allison	7,500		218.00	All grubbing and leveling included
Far West Lumber Co.			105.00	80 acres cleared for plow; 80 cleared for pasture; stumps not removed
Narrows Land Co.	1,200	\$479.32	116.60	48 stumps per acre
Arcadia Irrig. Co.			75 to 125	Light clearing
J. E. Larkin			100 to 150	In small tracts
Otto Wood	1,000		90.00	Stumps only; other tracts from \$100 to \$150 per acre
C. H. Quast			120.00	Heavy clearing
I. Johnson	1,700		84.00	
Mr. Colvin			26.00	Meadow; 15 stumps per acre
Mr. Willis	4,550	1,600.00	105.00	
M. Doran			36.00	Cleared of stumps only
M. Doran			40.00	Cleared of stumps only
L. Eckman	1,450		100.00	Approximated; spruce stumps
B. B. I. Co.			55.00	28½ days' time; cleared of stumps only
B. B. I. Co.			68.00	Light clearing
Lake Whatcom Logging Co.	900	1,010.30	123.00	Heavy clearing
Ed. Bardou	3,800		100.00	Approximated
Peterson Bros.			115.00	Contract
R. Kinnear	500		100.00	Approximated
R. Kinnear			130.00	
Robert Chabot			150.00	Approximated
C. Mankowski			357.00	Green timber—hemlock, fir, spruce
W. G. Hopkins			30.00	Brush; few stumps
W. G. Hopkins			100.00	
E. S. Avey			43.00	Vine maple and cottonwood
E. S. Avey			100.00	
F. C. Dunham			100.00	Second growth fir, 1 to 3 feet
F. C. Dunham	400	80.00	138.00	Large fir stumps
William Harding	None		125.00	Approximated
George Simpson			40.00	Large stumps not taken out
A. S. Caton	10,000		125.00	Heavy clearing
George Uhler	900	205.00	50.00	Meadow; cedar and fir stumps only
H. H. Tilley	4,000		90.00	
J. H. Davis	None		65.00	40 stumps per acre
W. B. Alderman	2,300		125.00	Spruce stumps; some work done before
Chrintensen & Co.	300	60.00	100.00	Spruce stumps only; other work done
Bagley & Streets	2,500		* 20.00	Wood and lumber sold from this tract; 630 cords wood, 80M ft. b. m. lumber
M. Harvey			150.00	
M. Harvey	4,000		105.00	U. S. magazine site—18" below surface

\* Net.

TABLE I.—COUNTIES OF WESTERN WASHINGTON, SHOWING ACREAGE IN CULTIVATION, IN TIMBER, AND IN LOGGED-OFF LAND

County	Acreage in merchant- able timber	Acreage logged off	Acreage in cultivation	Total acreage	Per cent suitable for agri- culture
Chehalis	583,200	112,748	11,216	807,432	90
Clallam	296,611	195,933	11,784	504,329	75
Clarke	190,000	108,661	51,570	350,231	..
Cowlitz	500,000	25,000	20,000	704,000	75
Island	8,013	99,866	9,317	117,196	75
Jefferson	186,647	59,427	4,657	254,385	50
King	640,000	110,000	74,857	1,243,000	..
Kitsap	45,429	171,364	7,978	224,771	..
Lewis	543,995	160,425	47,059	884,050	65
Mason	240,211	150,430	7,540	398,181	..
Pacific	367,827	62,720	23,042	453,139	..
Pierce	413,044	150,000	27,915	658,052	75
San Juan	10,000	80,000	4,000	95,684	..
Skagit	306,759	149,923	45,605	502,287	25
Snohomish	258,005	270,422	29,908	558,336	..
Thurston	291,200	120,000	13,680	428,005	..
Wahkiakum	74,564	67,337	3,642	145,544	50
Whatcom	78,405	258,302	35,059	371,766	..
Totals	5,033,911	2,352,109	428,829	8,700,388	..

TABLE II.—COST OF REMOVING FIR STUMPS FROM ONE TO FOUR FEET IN DIAMETER FROM 120 ACRES OF LAND IN 1907

Month	Powder Pounds	Fuse Feet	Caps Number	Stumps Number	—Labor— Hours	Dollars
June	13,700	10,100	2,400	2,135	2,380	650.00
July	1,750	2,050	400	239	260	87.00
August	2,750	2,700	700	445	324	114.90
September	1,950	2,150	500	383	324	126.37
October	1,250	1,000	300	228	198	77.53
November	2,350	3,100	800	378	283	114.97
Totals	23,750	21,100	5,100	3,818	3,769	1,170.77
Average per stump	6.22	5.52	1.33	..	0.987	0.3066
Average cost in cents	19.76	2.37	.87	..	..	..

MAXWELL AUTOMOBILES

SUPPLIES AND ACCESSORIES  
GOODYEAR AND MICHELIN TIRES

Up-to-Date Garage and Machinery Shop

Tip Top Auto Company

Columbia Avenue

HOOD RIVER, OREGON

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

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White  
River  
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MAKES

Whiter, Lighter  
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Practical orchard man; one who de-  
sires to become financially interested,  
and be sole manager. On a good salary  
as well as sharing the profits. Write  
for particulars to DR. M. E. EASTMAN,  
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We have a few thousand in surplus.  
RUSH IN ORDERS. We have the only  
prunes. Save one year. HURRY UP!  
Don't be disappointed. We have a full  
line of all other stocks.

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Carlton, Oregon

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Light, Strong and  
Durable

"Better Fruit" sub-  
scribers demand  
the "BETTER BOX" BOXES

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DISTRIBUTORS FOR

Save Time Hallocks

The best, most satisfactory fold-  
ing berry box on the market.  
Get our prices on the Hallocks  
and crates complete to your  
station.

Washington Mill Co.

Wholesale Manufacturers  
Spokane, Washington



# BETTER FRUIT

HOOD RIVER, OREGON

OFFICIAL ORGAN OF  
THE NORTHWEST FRUIT GROWERS' ASSOCIATION  
A MONTHLY ILLUSTRATED MAGAZINE  
PUBLISHED IN THE INTEREST OF MODERN  
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ALL COMMUNICATIONS SHOULD BE ADDRESSED AND  
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SUBSCRIPTION PRICE \$1.00 PER YEAR

IN ADVANCE IN UNITED STATES AND CANADA

FOREIGN SUBSCRIPTIONS, *Including Postage*, \$1.50

ADVERTISING RATES ON APPLICATION

Entered as second-class matter December 27, 1906, at the Postoffice at Hood River, Oregon, under Act of Congress of March 3, 1879.

**Over-Production.**—This feature of the fruit business seems to be a favorite and continued theme for a great many newspapers and a great many people who are not engaged in the orcharding business. Many articles have been written upon this subject by various people. Even now many newspapers continue to think it a sensational feature or a scoop. The average mode of procedure in arriving at a conclusion that there is going to be an over-production is for the writer to take whatever statistics he may obtain in reference to the number of trees planted in any particular state or in the United States and to figure that they will all make commercial orchards, and then to multiply the number of trees by an exaggerated yield per tree and deduce the fact accordingly that in ten years from now we will have so many million bushels of apples, which, according to their way of figuring, is simply enormous!

While it is true there has been a large setting in the Northwest, in the Middle West it has been comparatively small, and many orchards have been dug up for reasons well known to the owner. In the East there is considerable setting going on in the State of Virginia and some of the New England States and New York, but in the two latter sections only a moderate amount. Grant that a large acreage has been set. This does not mean that they will all come into bearing. There are many causes, any one of which will prevent an orchard from becoming a commercial proposition. Poor land, lack of rainfall, too severe winters, and perhaps greater than all these, general neglect. All of which means that a large percentage of the trees set throughout the United States will never make commercial orchards.

In 1890 there were 120,152,795 apple trees of bearing age in the United States. The production in the year 1889, one year previous, was 143,105,689 bushels. In 1900 the number of apple trees of bearing age in the United States was 201,794,642. The production in 1899 was 175,397,600 bushels. The number of bearing trees probably increased from 1900 to 1911 more than they did from 1890 to 1900. If such is the case we will probably have in the United States today (1911) 300,000,000 bearing apple trees, yet the crop was only about 75,000,000 bushels. In other words, two and one-half times as many apple trees in the year 1911 as we had in the year 1890 only produced about one-half the quantity of apples in 1899. This certainly seems very convincing, because the crop was considered large in the East last year.

If you ask the government officials connected with the Horticultural Department of the United States Department of Agriculture, at Washington, they will probably tell you that only ten to twenty per cent of the fruit trees that are set in the United States ever make commercial orchards. If you ask the same question of nurserymen who have been in the business for a lifetime, or of horticulturists connected with the experiment stations, who have been in service for the last twenty or thirty years, you will probably get the same answer. By this it is not intended that everyone should go into the apple business or fruit business, but on the other hand it must seem clear to the men who will take the trouble to investigate government statistics that it is evident that a large part of the land set to fruit trees throughout the United States will not make commercial propositions, and it must also be admitted by the men who will investigate thoroughly that such is a matter of record and past-history, and while there are many reasons that investigators can find out if they care to go to the trouble, they will find a great many orchards are not set on suitable soil, some on soil that is too shallow, some where the rainfall is not sufficient, and some where the weather conditions are too severe in winter.

It begins to look as if the fruit growers all over the whole country were waking up, and not only the fruit growers, but the fruit dealers are giving thought and study to the marketing problem. Anyone who is familiar with the marketing of apples is aware of the fact that the marketing systems in the past have not been what they should be and consequently can be greatly improved. A greater and wider and more thorough distribution has become necessary. Everyone realizes and admits this. All the manufactured goods are widely and wisely advertised. But little attention has been given to wise marketing, intelligent distribution and the right kind of advertising for the apple in the past. That the trade realizes this is evident from an article entitled "Advertising the Apple—Suggestions and Comment," by U. Grant Border, Baltimore, Maryland, published in *The Spy*, the official organ of the International Apple Shippers' Association, which reads as follows: "So far as properly advertising the apple is concerned, we growers and dealers are all sound asleep. We've got to wake up. What, think you, would be the outcome if positions were reversed and the great advertising captains who are now exploiting breakfast 'woods,' rubber heels and scouring soap, took possession of our apples and we their spearmints, powders and pink pills? I venture to say the new apple owners would waste no time in teaching that it's held 'bad form' to start the day without eating a baked apple, that the school children should eat more apples and less glueose, that pork eaten without apples is dangerous. In fact, we would then learn a hundred uses for apples never dreamed of before, and that it is better to have no money in bank than no apples in the pantry. The consumer would be taught the varieties and their various good qualities; taught that buying apples is buying bright cheeks, happy smiles, sparkling eyes and elastic step. Who would set a limit to the possibilities of such a campaign? On the other hand, what of our soap, soup and sawdust? Well, you know what would happen if we used no more sense in exploiting their uses than we do our apples, and, mind you, apples don't require half the boost that some things do, which I might mention, that are making millions for their owners. Now, we are all agreed on two essentials: First, we have a commodity worthy of highest praise; second, the need of a judicious, effective and persistent advertising campaign. How is this to be brought about? I make the following suggestion, which,

KUMAUN GOVERNMENT GARDENS  
UNITED PROVINCES, INDIA

From the Superintendent to the Palmer  
Bucket Co., Hood River Oregon:

Dated Jeolikote, the 30th Nov., 1911.  
No. 515

Dear Sir: Will you kindly arrange to send us one of your fruit picking buckets, as advertised in "Better Fruit." Its cost and forwarding charges will be paid on receipt of your bill.

Yours faithfully,

NORMANPI,

Supt. Kumaun Government Gardens.

KUMAUN GOVERNMENT GARDENS  
UNITED PROVINCES, INDIA

From the Superintendent to the Manager  
Schmidt Lithograph Company, Portland,  
Oregon:

Dated Jeolikote, the 30th Nov., 1911.  
No. 511

Dear Sir: Kindly send samples and prices of your fruit box and other labels and oblige.

Yours faithfully,

NORMANPI,

Supt. Kumaun Government Gardens.



if found inexpedient or impracticable, will at least, I hope, lead to something worthy our great and growing business, worthy of the capital, brains and energy being expended in raising, perfecting and packing apples. An effective advertising campaign cannot be conducted without a liberal money expenditure. The whole plan should be conducted through some great and representative body like the International Apple Shippers' Association. A general committee of fifty, selected from all apple producing sections, should be appointed, and they in turn select five of their own number as a special committee to take specific charge, employ advertising agents, etc. Every apple association and individual shipper or grower should be brought to realize the great importance of contributing to a general fund, in proportion to the volume of their shipments. To raise this fund stamps should be issued, similar to the Red Cross stamps, to be sold in quantities as desired, and each shipper place a stamp on each package. At one dollar per hundred a quarter of a million dollars could be realized on a crop the size of the present one, after allowing for any not willing to help the cause. I think very few shippers would wish dealers throughout the country to know they were satisfied to reap proportionate benefits and let others pay the expense; consequently a very general use of the stamp would follow. Jobbers and retailers in all markets would give preference to stamped packages, all other things being equal, for they realize that advertising helped them, too. We must create a sentiment in favor of some plan, and if the above suggestion is not a good one, give us your ideas. Keep up the agitation until we hit the trail. Under normal conditions the value of the crop of 1912 will be \$100,000,000. A judicious use of \$250,000 will help us to realize every dollar of the crop's value, while a supine neglect may result in obtaining five, ten or pos-

sibly twenty-five per cent less. Figure a little! The advertising plan means a steady, insistent demand from the first apple picked until the last is withdrawn from storage."

**Poultry in the Orchard.**—After the young orchard is set it is several years before it comes into bearing, according to the kinds of fruit and the different varieties. During this period there is the expense of caring for the place and one's living in addition. Those who go into the orchard business without sufficient funds to meet these two expenses until their orchard comes into bearing must either earn something outside or grow something between the trees. Strawberries and various kinds of vegetables are frequently set between the tree rows, but when this is done sufficient space should be left on each

side of the tree rows to allow a good, thorough cultivation of the trees.

There are many ways in which the fruit grower who has not the means to carry him through until his orchard comes into bearing can earn enough money to get along nicely. A good income can be obtained from poultry if the business is conducted in an intelligent way, according to the most approved plans, and on a businesslike basis. The suggestion made by Lewis A. Hills of Salt Lake City that the orchardists raise poultry seems worthy of the consideration of every fruit grower who needs some extra money during the time his trees are young, and even after the trees begin to bear this business can be conducted and made to bring in quite an income to the orchardist. Anyone who knows anything about poultry understands that chickens must have proper care if they are expected to produce results. The old-fashioned stationary chicken house is a thing of the past among up-to-date poultry raisers. Mr. Hills' plans provide a means for the orchardist to engage in the poultry business at the lowest possible expense and for this reason ought to meet with approval. Mr. Hills has designed and constructed portable poultry houses and in order that the grower may obtain them at the least possible expense he offers to sell a set of blueprint plans showing how to make these poultry houses at the very reasonable figure of \$2.50 for the plans, including a complimentary copy of his feeding chart, which retails for fifty cents. With these plans the grower can construct his own poultry houses at a great deal less expense than he can buy them from some distant market, with freight charges added. Further particulars may be obtained by writing Mr. Lewis A. Hills, whose advertisement appears elsewhere in this edition.

## THE HOOD RIVER APPLE

Is no secret. It's an unanswerable argument in favor of thorough and consistent spraying. Neither is it a secret that

### Myer's Spray Pumps

Are the most efficient and improved of all Spray Pumps. You can't afford to use a poor pump when a genuine MYERS, the pump of service, costs but little more.

48-PAGE SPRAY PUMP BOOK FREE.

Drop us a card mentioning this paper and we will send you one of these books

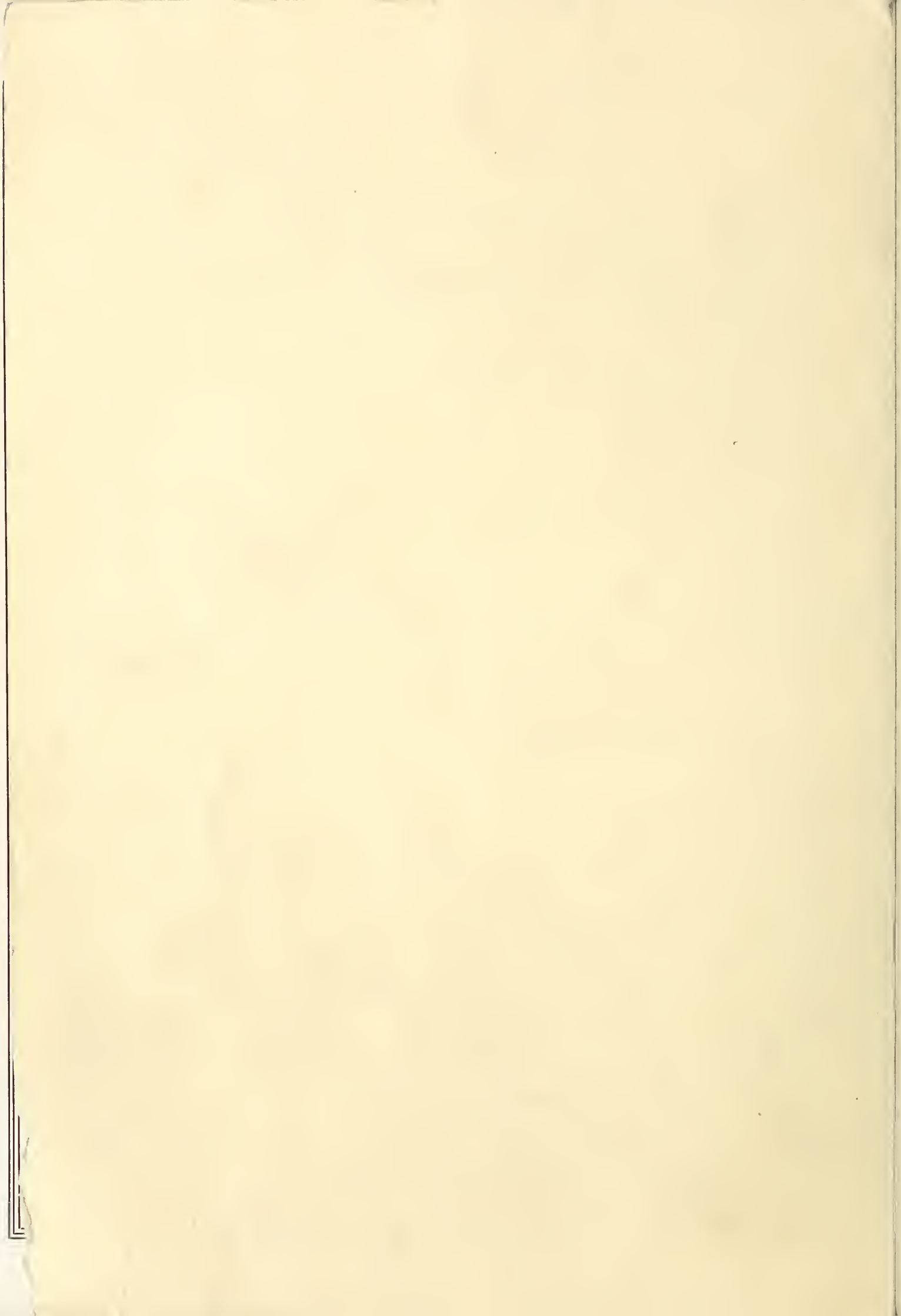
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LEWIS & STAYER CO.

PORTLAND-BOISE-SPOKANE



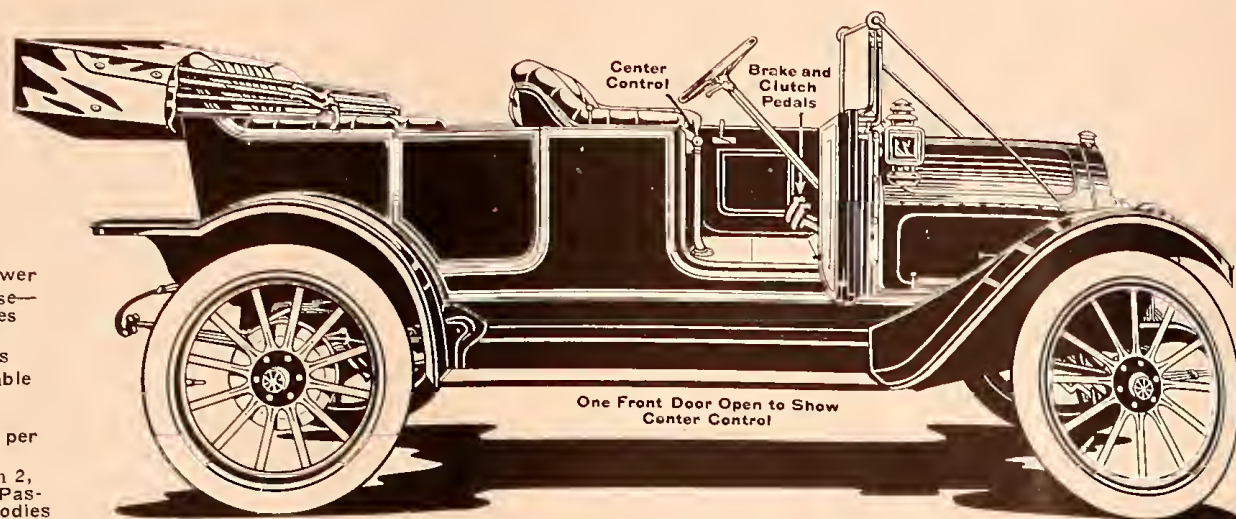
Spraying scene in the Wenatchee Valley







30-35  
Horsepower  
Wheel Base—  
112 Inches  
Wheels—  
34 Inches  
Demountable  
Rims  
Speed—  
45 Miles per  
Hour  
Made with 2,  
4 and 5 Pas-  
senger Bodies



Top and windshield not included in price. We equip this car with mohair top, slide curtains and slip-cover, windshield, gas tank and speedometer—all for \$100 extra.

SELF STARTER, IF WANTED, \$20 EXTRA

# Reo the Fifth—\$1,055

## The Car That Marks My Limit

By R. E. Olds, Designer

I have no quarrel with men who ask more for their cars—none with the men who ask less. I have only to say that, after 25 years—after creating 24 models and building tens of thousands of cars—*here's the best I know.* I call it My Farewell Car.

I don't wish to surround this new car of mine with any intangible glamour.

Glamour is always expensive.

I am simply a shop man, engineer and designer. In my earliest memories I was puttering around my father's engine works.

On leaving school I began engine building. And the Olds Gas Engines—famous half the world over—gained their place by actual merit.

For 25 years I have built automobiles. I began with single-cylinder, six-horsepower machines. And I've run the whole gamut to six-cylinder sixties.

Tens of thousands of men, in those 25 years, have used cars of my designing. Just because they relied on me, year after year, to build the best of the current cars.

I recite this to show that I am essentially practical. I shall never attempt to create any illusions. So what I say here about Reo the Fifth will be simple, plain, everyday fact.

### No Sensations

Reo the Fifth is no great innovation. The time has gone by for that.

Thousands of good men, for two decades, have worked at perfecting cars. Together they have brought the modern automobile pretty close to perfection.

I believe that this new car embodies the best that all these men have accomplished. I searched the whole world for ideas for it.

It represents, in addition, the best I have learned through 25 years of continuous striving. So it comes, I believe, pretty close to finality.

The worth of a car, in these days, depends on no exclusive devices. It depends on facilities, on experience, on honesty of purpose, on the genius for taking pains.

Here I offer you all those—each in the extreme. And no motor car maker, whatever his price, knows how to offer more.

### The Lessons Taught by Tests

My chief advantage lies here:

I was among the first to start learning the needs of automobiles. And I learned faster than others, because I had more cars out.

Experience is our greatest teacher. The inexperienced designer, however well-mean-

ing, is bound to make countless mistakes. One learns only through errors the need for infinite pains.

One cannot anticipate every possible weakness. He must watch how cars, under some conditions, fall down. Then make no fault forever impossible.

In this way we learn to multiply margins of safety. We learn the need for exactness, for careful inspection, for laboratory tests. What once seemed sufficient becomes recklessness later.

Thus I have been learning for 25 years through the myriads of cars I have built. And the flawless construction of this Reo the Fifth is due to that boundless experience.

### Common Weaknesses

I might mention a thousand points which have thus been perfected, but I'll deal with the leading essentials.

The main source of weakness in most cars is steel. It is due to ignorance, to carelessness or skimping.

By countless tests I have learned the best alloy for each purpose. And, to be sure, I get it, I analyze each lot of steel.

For the axles and drive shaft I use Nickel Steel. I use Vanadium Steel for connections. For the gears I use the most perfect alloy ever worked out for this purpose.

To test these gears, which others test with a hammer, I have built a crushing machine of 50 tons' capacity. There I submit the gears to a crushing test, to measure exactly what each gear will stand.

The Nickel Steel axles are much larger than necessary. Every year I have built them stronger. Now my margin of safety in this vital part is considered extreme by most makers.

For the bearings on axles and on the transmission I use Timken Roller and Hyatt High Duty. Lesser bearings have led to trouble.

I have found that magnetos differ immensely. So I devised a test where, for ten hours a day, the magneto must act under tremendous compression. I have found only two makes which stand it.

Half the troubles with cars are due to a carburetor incapable of dealing with low-grade gasoline. So I adapted a carburetor to the commonest grades. And I doubly heat it—with hot air and hot water—to facilitate evaporation.

I add about one-fifth to the power of my engine by putting intake valves on top.

The long-stroke motor, the cylinders in pairs, the dust-proof transmission, the system of oiling, all simply accord with the best modern practice.

I carry inspection to the farthest extremes. Every part is inspected—every vital part tested. That is essential. Without it, flaws will creep in which only use can discover.

### Good Measure

Another thing I have learned is that buyers enjoy good measure.

My wheel base is long, my wheels extra large, my tonneau is roomy. The car is over-tired. The springs are much stronger than necessary.

The design of the car, as each can see for himself, has the last touch of up-to-date-ness.

The upholstering is deep, the filling is hair, the covering is genuine leather. I avoid all the petty economies.

The body finish consists of 17 coats. The lamps are enameled, as per the latest vogue. Even the engine is nickel trimmed.

The most perfect car will fail to satisfy buyers unless its appearance is perfect.

### Exclusive Features

In addition to all this, Reo the Fifth has two or three features found in no other car.

One is the center cane-handle control. See the picture. All the gear shifting is done by moving this handle not more than three inches. It moves in four directions—for low speed, intermediate, high speed and reverse.

Another unique feature is the absence of brake levers. Both of the brakes operate by foot pedals. One of the pedals operates the clutch and the service brake as well.

So the front of the car is clear. The driver dismounts on either side as easily as you dismount from the tonneau.

This arrangement permits of the left side drive. The driver sits, as he should sit, close to the cars which he passes. He sits where he can look back in making a turn. He is on the up side of the road. This has only been possible heretofore in electrics.

These are features to which other cars must come. But you find them today only in Reo the Fifth.

## Price—the Only Sensation

### Fixed Month by Month

We now make in this whole shop only one style of chassis. That saves in itself nearly \$200 per car.

We have standardized the car, so that changes aren't necessary. Our tools and machinery last until we wear them out.

The whole car is now built in this one model factory, so we pay no profits to parts makers.

This year, in addition, we have cut a big slice from our profits. This new car, we figure, will more than double our output. And our profit hereafter will be a trifle per car.

### Paring Down Cost

For the past several years, my chief effort has been to cut down the cost of my cars.

I have felt that my place in the future depended as much on paring of cost as on skill in designing.

I have been helped in this by an enormous demand for my cars. Our multiplied output has cut overhead cost.

I have also been helped by the good-will of these cars created. Each has helped to sell others. So selling cost is a fraction of what it was.

I have helped myself by inventing special machinery. The parts are now made by automatic machines, invented and built in our shops. Labor cost, on some parts, has been divided by fifty. And we get the utter exactness which hand work never gave.

### Price Not Fixed

We have also adopted a changeable price. The price of today is based on today's price for materials—the lowest they have been in years. But our contracts with dealers provide for instant advance.

The price of \$1,055 is the minimum. It can certainly never go lower. But, if cost advances, the price must be advanced. Price cannot be fixed for six months in advance without leaving big margin, and we haven't done that.

This initial price is the minimum. It is the lowest price, in my estimation, which an equal car ever will cost. But that is today's price only. I very much doubt if Reo the Fifth can long be sold that low.

### My Supreme Effort

A hundred makers will argue that their higher-priced cars offer more than does Reo the Fifth.

I don't wish to dispute them. Judge that for yourself. It isn't hard to make actual comparisons.

Whatever the verdict, I can only say that this car marks my limit. I would not know where to add a single iota if paid a doubled price.

Better materials I know are impossible. Better workmanship is out of the question. Better features and devices, if they exist, are still unknown to me.

More power is possible, but not economical. More size, room and weight can be had, of course, if one thinks them worth the price. But more of care or skill or quality is totally out of the question.

This Farewell Car is my finest creation. If others do better, they are better men than I.

### Ask for Catalog

This car with roadster body sells for \$1,000. With close-coupled body or touring car body the price now is \$1,055. Our catalog shows the various body designs.

It also gives complete specifications. It enables comparisons, part by part, with any other car.

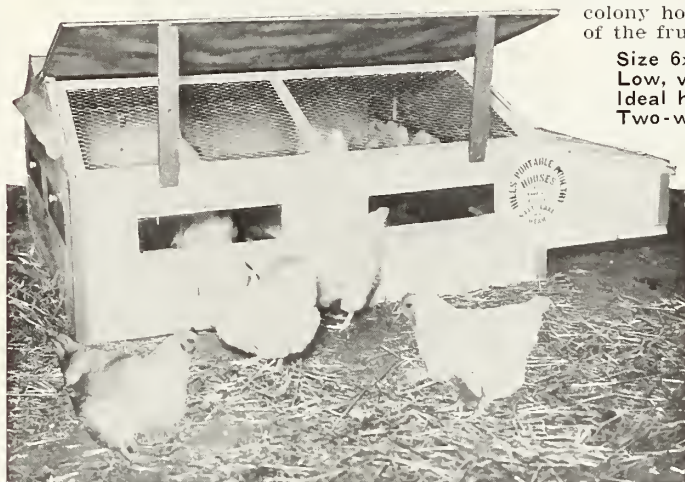
The book is ready for mailing. Ask for it now, as this car at least is worth investigation. When we send the book we'll tell you where to see the car. Address.

**R. M. Owen & Co.** General Sales Agents for **Reo Motor Car Co., Lansing, Mich.**  
Canadian Factory, St. Catharines, Ontario



## THE YEARS BEFORE BEARING, THE SEASON BETWEEN CROPS AND OFF-YEARS ARE PERIODS THAT THE SUCCESSFUL FRUIT-GROWER BRIDGES OVER BY MEANS OF SOME PROFITABLE SIDE-LINE

The raising of poultry under the modern colony system has come to be one of the most attractive of these side-lines. The **HILLS' PORTABLE POULTRY HOUSES** are the recognized standard colony houses for highest efficiency and they have won the confidence of the fruit-grower on their merits.



Size 6x8 feet. Capacity 15 hens. Practical size for portable houses. Low, will not injure low-headed trees in moving.

Ideal housing and yarding in confinement when desired.

Two-way adjustable roofs successfully handle all storms.

Instantly convertible into either a south-front or north-front house.

Ideal fresh-air conditions in all weather without exposure. Low, warm and sunny in winter. Cool, light and airy in summer.

Roofs of heaviest water-proof material, with protecting dead-air space.

Roofs are light and strong and rain-proof in any position.

Houses absolutely dry inside in all weather.

Double scratch floor insures constant exercise in dry litter.

Roofs when raised give instant access to every part for cleaning.

Galvanized compartment feeders, filled and cleaned from the outside.

Built of high-grade lumber and all corners securely reinforced.

Special treatment renders houses vermin and rot-proof. All equipment, including roosts, quickly removed for cleaning.

Equipped with 5 Hills' Sanitary Nests, with dark run-way, securely crated for shipment, weight 300 pounds, \$18.00 f.o.b. Salt Lake City. Equipped with 5 Hills' Patent Registering Nests, \$24.50. Prices, freight prepaid, quoted on application. Complete plans with private building right, \$2.50. Send today for poultry-house circular and descriptive price list.

**LEWIS A. HILLS, Proprietor Hills' Poultry Farm, Salt Lake City, Utah. Box 773**

## Extent of Fruit Growing in Washington

By F. A. Huntley, State Commissioner of Horticulture

**A** REPORT on the extent of the fruit growing industry of the state submitted to Governor M. E. Hay by F. A. Huntley, state commissioner of horticulture, shows the total number of fruit trees in the orchards of the state to be 14,987,082. The state horticultural commissioner, with the aid of the district inspectors and their assistants throughout the state, has been engaged for the past two years in making a record of the actual number of the different kinds of trees in each and every orchard of the state. In many of the counties this actual count of trees is complete to January 1, 1912. In a few of the counties where the count was started a year or more ago and it was found impossible to complete the work because of a lack of men and means, the additional plantings have been carefully estimated from the reports of nursery stock shipments into such counties.

The report submitted to the governor gives the number of trees and the number of acres planted to apples, pears, peaches, apricots, plums, prunes and cherries in each county of the state, and shows the number of trees in bearing and the number of trees that have not yet reached a bearing age. The total area planted to the trees mentioned is 229,886 acres. There is, in

addition to this, the following fruit acreage:

Small fruits, including raspberries, blackberries, loganberries, currants and gooseberries, 3,500 acres; strawberries, 2,532 acres; cranberries, 400 acres; grapes, 2,500 acres; making a total area of 238,818 acres devoted to fruit growing in the State of Washington.

Estimating the average annual valuation of the fruit crop of the state at \$8,500,000 for the next five years, which seems reasonable by comparison with past records, would indicate that the lands now planted to fruits have an average value of \$350 per acre, figured on an earning basis of ten per cent on this valuation. A great many of the orchards have an earning capacity far in excess of these figures, but others are unprofitable, and will continue to be so owing to a lack of proper care, unsuitable varieties, kinds of fruits not adapted to the locality where planted and inadequate facilities for marketing. It will take some years to properly adjust these conditions. Varied climatic and soil conditions, and other influences so characteristic of this state, will compel fruitgrowers to specialize in the raising of fruits best adapted to their particular localities. Every year it is becoming more apparent that certain localities are particularly adapted to the raising of certain kinds of fruits, both in respect to quantity and quality. These are two most important factors to be considered in commercial fruit growing. Apples have been found to do best in the higher altitudes, where the seasons are well defined, a dormant winter season being necessary for the setting and the development of strong

fruit buds, which ultimately result in a superior product. The best peach growing districts are found in the medium and lower altitudes where the soils are warm and higher atmospheric temperatures prevail throughout the year. The American varieties of grapes have a wide range of adaptability, succeeding almost within the range of both the apple and the peach, excepting in the

## Famous Hood River Apples

Spitzenbergs, Newtowns, Arkansas Blacks, Jonathans, Ortleys, Baldwins, Winesaps, R. C. Pippins, Ben Davis, M. B. Twigs

Look Good, Taste Better, Sell Best  
*Grade and Pack Guaranteed*

Apple Growers' Union  
Hood River, Oregon

## LINDSAY & CO. Ltd. Wholesale Fruits

HELENA, MONTANA

*Established in Helena a Quarter Century*

Branch houses: Great Falls, Missoula and Billings, Montana

## Hood River Grown Nursery Stock for Season 1911-12

Standard Varieties

Prices Right and Stock First Class

C. D. THOMPSON, Hood River, Oregon

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT



colder localities and where the prevailing soil temperatures are low. The European varieties of grapes are confined, in this state, almost exclusively to the Columbia and Snake River Valleys, from Wenatchee southward and from Clarkston westward to where the Columbia River reaches the Cascade Mountains. Plantings of European grapes in these localities, which have passed through a test of years, have

furnished a commercial product equal in quality to the best varieties of the same class raised in California. Small fruits of all kinds are most successfully raised west of the Cascade range, where hundreds of carloads of the best berries are being produced annually for the most discriminating Eastern markets. Pears, prunes and cherries have the greatest adaptability of all fruits to a wide range of conditions both from the

standpoint of commercial production and domestic use.

By careful discrimination the fruit-grower can find in the State of Washington most ideal conditions for the raising of all fruits known to a temperate climate to the highest degree of perfection.

The table showing the proportion of the different fruits as distributed by counties follows:

FRUIT TREE COUNT AND ORCHARD ACREAGE OF THE STATE OF WASHINGTON, JANUARY 1, 1912

All items ending in double "0" are careful estimates based upon computations as nearly accurate as possible.  
All items ending in figures are actual count.

F. A. Huntley, State Commissioner of Horticulture, Tacoma, Washington

COUNTIES	AGE OF TREES	APPLES		PEARS		PEACHES		APRICOTS		PLUMS		PRUNES		CHERRIES	
		Trees	Acres	Trees	Acres	Trees	Acres	Trees	Acres	Trees	Acres	Trees	Acres	Trees	Acres
Adams	{ 4 yrs and older....	2,091	....	1,289	...	581	...	168	...	229	...	581	...	...	...
	{ 3 yrs and younger...	11,646	250	3,474	44	1,991	24	200	3	350	5	1,055	15	...	...
Asotin	{ 4 yrs and older....	38,272	....	1,750	...	129,742	...	2,279	...	3,493	...	39,200	...	...	...
	{ 3 yrs and younger...	85,874	2,257	12,600	133	47,783	1,644	343	24	12,751	150	1,229	374	...	...
Benton	{ 4 yrs and older....	120,423	....	32,908	...	114,149	...	3,522	...	4,183	...	12,291	...	...	...
	{ 3 yrs and younger...	267,441	7,052	76,318	1,011	71,533	1,719	5,968	88	10,536	136	11,991	225	...	...
Chehalis	{ 4 yrs and older....	29,260	....	2,775	...	700	...	...	...	2,970	...	2,550	...	...	...
	{ 3 yrs and younger...	3,115	589	680	32	266	9	...	...	725	34	925	32	...	...
Chelan	{ 4 yrs and older....	578,388	....	42,744	...	122,969	...	20,172	...	10,670	...	30,134	...	...	...
	{ 3 yrs and younger...	1,243,193	33,120	50,622	865	52,022	1,620	20,569	377	4,951	145	14,188	410	...	...
Clallam	{ 4 yrs and older....	32,100	....	1,100	...	50	...	...	...	700	...	200	...	...	...
	{ 3 yrs and younger...	4,100	658	1,100	19	200	2	...	...	900	15	1,500	16	...	...
Clarke	{ 4 yrs and older....	123,638	....	18,097	...	4,762	...	177	...	511,721	...	12,761	...	...	...
	{ 3 yrs and younger...	39,132	2,960	5,730	221	7,331	112	238	4	26,472	4,983	5,009	165	...	...
Columbia	{ 4 yrs and older....	81,496	....	5,784	...	12,882	...	...	...	5,880	...	5,192	...	...	...
	{ 3 yrs and younger...	21,000	1,864	3,000	81	2,000	138	...	...	800	62	500	53	...	...
Cowlitz	{ 4 yrs and older....	36,983	....	7,737	...	492	...	...	...	13,445	...	8,385	...	...	...
	{ 3 yrs and younger...	6,005	782	1,441	85	1,115	15	...	...	557	130	1,292	90	...	...
Douglas	{ 4 yrs and older....	14,862	....	4,902	...	5,056	...	1,046	...	1,041	...	2,106	...	...	...
	{ 3 yrs and younger...	222,339	4,313	14,771	182	28,242	308	6,487	70	2,519	33	6,458	79	...	...
Ferry	{ 4 yrs and older....	14,267	....	712	...	1,321	...	369	...	1,221	...	1,393	...	...	...
	{ 3 yrs and younger...	23,739	691	756	14	2,681	37	210	5	876	19	1,429	26	...	...
Franklin	{ 4 yrs and older....	4,310	....	1,006	...	2,586	...	142	...	240	...	546	...	...	...
	{ 3 yrs and younger...	37,405	759	17,778	174	10,404	120	728	8	941	11	2,204	26	...	...
Garfield	{ 4 yrs and older....	23,865	....	4,164	...	26,451	...	...	...	7,405	...	4,445	...	...	...
	{ 3 yrs and younger...	6,000	543	2,000	57	1,500	259	...	...	500	73	200	43	...	...
Grant	{ 4 yrs and older....	15,500	....	800	...	8,500	...	500	...	400	...	200	...	...	...
	{ 3 yrs and younger...	110,700	2,295	29,100	277	29,200	349	4,700	48	6,400	63	7,900	75	...	...
Island	{ 4 yrs and older....	44,800	....	4,800	...	600	...	...	...	3,900	...	7,200	...	...	...
	{ 3 yrs and younger...	13,200	1,055	2,800	70	300	9	...	...	2,100	56	4,900	112	...	...
Jefferson	{ 4 yrs and older....	19,800	....	800	...	40	...	...	...	5,700	...	600	...	...	...
	{ 3 yrs and younger...	2,700	409	500	12	100	1	...	...	400	57	700	12	...	...
King	{ 4 yrs and older....	84,000	....	18,000	...	1,400	...	600	...	29,000	...	25,000	...	...	...
	{ 3 yrs and younger...	58,000	2,582	21,000	361	1,700	29	1,100	16	17,000	426	32,000	528	...	...
Kitsap	{ 4 yrs and older....	151,681	....	24,900	...	3,928	...	...	...	23,737	...	19,167	...	...	...
	{ 3 yrs and younger...	15,368	3,037	2,470	253	1,155	47	...	...	2,314	241	4,846	222	...	...
Kittitas	{ 4 yrs and older....	30,900	....	2,400	...	500	...	...	...	1,800	...	1,700	...	...	...
	{ 3 yrs and younger...	144,800	3,195	16,390	173	2,300	26	...	...	700	23	600	21	...	...
Klickitat	{ 4 yrs and older....	97,300	....	3,100	...	23,000	...	500	...	4,600	...	3,000	...	...	...
	{ 3 yrs and younger...	296,500	7,160	10,700	128	33,600	524	30,900	291	1,800	59	12,000	139	...	...
Lewis	{ 4 yrs and older....	84,111	....	12,253	...	576	...	...	...	40,705	...	14,567	...	...	...
	{ 3 yrs and younger...	8,994	1,693	10,605	212	741	12	...	...	1,968	395	3,076	163	...	...
Lincoln	{ 4 yrs and older....	58,634	....	9,344	...	19,597	...	883	...	5,868	...	3,419	...	...	...
	{ 3 yrs and younger...	22,644	1,478	7,653	157	20,239	369	499	13	495	59	1,797	48	...	...
Mason	{ 4 yrs and older....	12,900	....	2,595	...	475	...	...	...	2,420	...	2,400	...	...	...
	{ 3 yrs and younger...	2,260	276	555	29	300	7	...	...	410	27	635	28	...	...
Okanogan	{ 4 yrs and older....	158,667	....	3,675	...	6,753	...	1,450	...	5,285	...	2,800	...	...	...
	{ 3 yrs and younger...	689,868	15,428	12,480	149	38,300	417	10,413	110	6,486	109	11,457	132	...	...
Pacifie	{ 4 yrs and older....	8,053	....	1,064	...	50	...	...	...	2,634	...	1,144	...	...	...
	{ 3 yrs and younger...	1,589	175	417	14	34	...	...	...	407	28	422	15	...	...
Pend Oreille	{ 4 yrs and older....	6,108	....	250	...	365	...	40	...	711	...	214	...	...	...
	{ 3 yrs and younger...	4,545	194	746	9	992	13	58	1	1,425	20	351	5	...	...
Pieree	{ 4 yrs and older....	98,000	....	20,000	...	1,000	...	600	...	30,000	...	25,000	...	...	...
	{ 3 yrs and younger...	50,000	2,691	20,000	370	1,500	23	800	13	15,000	417	30,000	509	...	...
San Juan	{ 4 yrs and older....	48,466	....	2,449	...	19	...	34	...	6,829	...	1,461	...	...	...
	{ 3 yrs and younger...	9,118	1,047	5,610	75	511	5	94	1	1,185	74	2,402	36	...	...
Skagit	{ 4 yrs and older....	54,077	....	7,419	...	2,281	...	...	...	6,583	...	7,547	...	...	...
	{ 3 yrs and younger...	24,503	1,429	4,610	111	1,951	39	...	...	6,730	123	6,316	129	...	...
Skamania	{ 4 yrs and older....	29,800	....	2,300	...	4,900	...	60	...	7,200	...	1,800	...	...	...
	{ 3 yrs and younger...	42,900	1,322	5,900	76	3,700	80	100	2	300	69	1,100	27	...	...
Snohomish	{ 4 yrs and older....	60,964	....	7,912	...	1,389	...	...	...	5,467	...	8,416	...	...	...
	{ 3 yrs and younger...	32,726	1,704	5,663	126	1,392	26	...	...	6,925	115	8,246	154	...	...
Spokane	{ 4 yrs and older....	595,076	....	27,333	...	32,500	...	...	...	48,373	...	46,304	...	...	...
	{ 3 yrs and younger...	1,299,805	34,453	6,902	317	6,704	364	...	...	942	457	9,834	520	...	...
Stevens	{ 4 yrs and older....	126,624	....	8,337	...	11,524	...	1,231	...	11,738	...	6,582	...	...	...
	{ 3 yrs and younger...	199,052	5,922	15,852	224	14,330	239	1,856	29	2,880	135	9,618	150	...	...
Thurston	{ 4 yrs and older....	68,385	....	4,565	...	550	...	...	...	34,155	...	8,640	...	...	...
	{ 3 yrs and younger...	4,250	1,321	3,375	74	320	8	...	...	1,800	333	1,535	94	...	...
Wahkiakum	{ 4 yrs and older....	3,480	....	277	...	...	...	...	...	1,729	...	202	...	...	...
	{ 3 yrs and younger...	354	70	63	3	26	...	...	...	45	16	44	2	...	...
Walla Walla	{ 4 yrs and older....	95,848	....	8,096	...	7,318	...	...	...	27,231	...	3,630	...	...	...
	{ 3 yrs and younger...	106,278	3,675	3,000	103	5,000	114	...	...	3,000	280	1,000	43	...	...
Whateom	{ 4 yrs and older....	29,620	....	2,306	...	493	...	35	...	5,656	...	5,423	...	...	...
	{ 3 yrs and younger...	7,945	683	3,635	55	1,557	19	89	1	1,824	69	3,210	80	...	...
Whitman	{ 4 yrs and older....	106,750	....	1,145	...	68,750	...	2,880	...	26,550	...	5,955	...	...	...
	{ 3 yrs and younger...	19,544	2,296	7,313	78	25,138	869	3,715	61	4,235	285	4,720	99	...	...
Yakima	{ 4 yrs and older....	642,032	....	247,222	...	461,729	...	6,087	...	18,383	...	16,644	...	...	...
	{ 3 yrs and younger...	1,241,739	34,250	310,506	5,164	226,065	6,369	16,632	210	27,262	423	13,989	284	...	...
Totals.....		10,211,902	185,671	1,246,235	11,539	1,724,201	15,965	148,474	1,375	1,096,793	10,156	559,477	5,180		



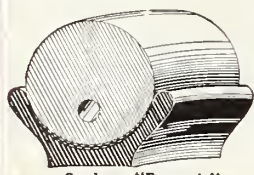
# GOOD YEAR Rubber Tires

## for Carriages—Mean Long Service Satisfaction

Goodyear Wing Carriage Tires save you both trouble and money; give comfort and save your carriage.

The patented wing feature gives the tire double life. It preserves the base. The wing extension presses tightly against the channel and prevents mud, grit and water from entering, which would cut, grind, loosen and destroy the base.

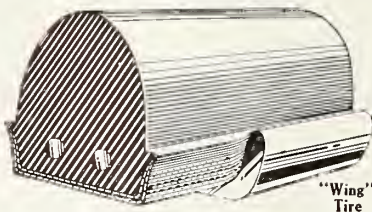
That is what happens with ordinary carriage tires. That's why they are expensive and unsatisfactory. That is impossible with Goodyear Wing Tires. The base remains sound. The tire stays on—gives long wear—about twice the ordinary—made of tough, springy rubber—gives perfect satisfaction. Insist on Goodyear Wing Tires—you'll get the world's best.



Goodyear "Eccentric"

### Eccentric Cushion Tire

An improved cushion tire—superior to any other. The retaining wire hole below the



"Wing" Tire

center allows 50% more wearing depth—wears that much longer—saves you that in money.

The hole being below the center, does not crack out. The tire stays firm in channel. High grade, resilient rubber assures comfortable riding and saves the carriage—assures you perfect satisfaction.

Our latest carriage tire book sent free. Gives full information. (530)

**The Goodyear Tire & Rubber Company**  
Akron, Ohio

Branches and Agencies in 103 Principal Cities

## Fruit Growing in Virginia—Questions Answered

By Dr. E. A. Shubert, Roanoke, Virginia

SINCE the appearance of my first article in "Better Fruit" on "Apple Culture in Virginia" I have been the recipient of so many letters of inquiry that it has been next to impossible for me to reply to all of them. The questions asked were of such a character that they required careful thought and intelligent replies. Among these questions were climatic conditions, proximity to market, spraying

requirements, adaptability of soil, varieties of fruit, etc. I shall endeavor to answer in this article these several questions briefly.

The climatic conditions of Virginia, prevalent throughout the valley and Piedmont divisions of the state, where fruit culture is conducted on an extensive commercial scale, we find a range of temperature throughout the growing season well adapted to the develop-

ment of hardy trees and high grade fruit. The days for the greater part are sunshiny and the temperature sufficiently equable so that the range of the thermometer does not militate against the formation of a perfect fruit, whereas the nights are always cool, which develops shape, size, color, thin skin, small core, fine grain and the best flavor in the world. About one-half of the State of Virginia is adapted to fruit culture. This does not mean that twelve million acres of land, comprising the western half of the Old Dominion, is all adapted to the culture of the apple and other fruit, but I do mean that there are fully five million acres of land in the State of Virginia in areas of sufficient size for the establishment of orchards on a large commercial scale, and this ranges over a wide latitude and diversified altitude adapted to many varieties of standard apples that are grown within our state.

There is no other state in the Union that is more favorably situated for the transportation of products from the orchard than is Virginia. Within a radius of three hundred miles we have

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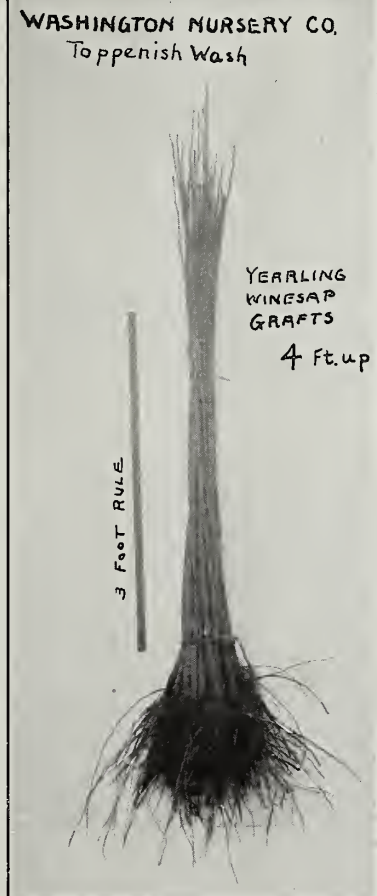
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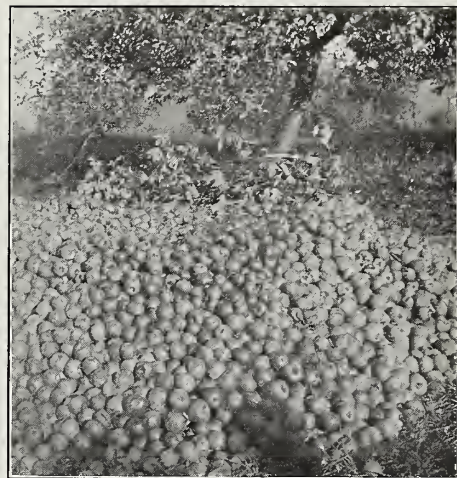
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about half the population of the United States, and this represents people who consume nearly seventy per cent of the products of the orchard. All of these markets can be reached by fast freight within twenty-four hours, eliminating the necessity of refrigerator cars, insuring the fruit reaching its destination in perfect condition and guaranteeing to the grower a very low transportation charge. To the south of Virginia is a population of more than fifteen million, who up to the present time are not acquainted with the food qualities of the apple and other orchard products to a degree that induces them to consume a maximum amount of the product. It is safe to say that the South-



Albemarle Pippins, Roanoke County, Virginia

eastern States alone, if properly educated, will consume ten million barrels of apple annually, and this is a market that Virginia is in a position to supply more readily and in a much more satisfactory manner than any other fruit belt in the United States.

The Virginia orchards, like all others, require careful attention. We have insects and other enemies of the orchard in Virginia the same as elsewhere, and notwithstanding that fully one-half of our orchards have no disease of any character attacking them, still it is our policy to spray for all orchard insects. In my own orchard, where San Jose scale is unknown, and other diseases such as bitter rot, aphids and other pests have not appeared, I spray from four to five times a year, along the same lines as that practiced by practical orchardists elsewhere.

The soil of Virginia, on account of the wide area in which the apple thrives, varies very materially. In the mountain coves and gorges, at altitudes ranging from fifteen hundred to three thousand feet, where the leaves and other vegetable mold has accumulated for ages, is found the Porter clay and Porter black loam, in depths ranging from one to ten feet. It is in these coves and gorges that the Albemarle or Newtown Pippin thrives. This land is not found in large areas, most of the Porter loam being found in acreage ranging from five to one hundred, but there are instances of coves containing



from five hundred to one thousand acres, which still can be had at reasonable prices—ranging from \$15 to \$50 per acre—depending on location and development of same. The Porter black loam is best adapted, as I have already stated, to the Albemarle Pippin and other white and yellow apples. In the Piedmont section we find the Cecil clay, chert and loam, underlaid with a good red clay sub-soil that is peculiarly adapted to Winesap, Stayman Winesap, Gano, Grimes Golden, York Imperial, Black Ben Davis, Jonathan and other varieties. The peach also does exceptionally well on this character of soil, and thrives and lives to a good age. Trees on this soil usually come into bearing at six years, and frequently four and five-year-old trees carry a goodly amount of fruit, depending on the attention given the same. In the valley section of the state we find a



A Winesap orchard in Piedmont, Virginia

soil composed of a disintegration of limestone, shale and some granites that is adapted to the cultivation of both yellow and red apples. This soil varies very materially in appearance in different sections, but the analysis will show that the composition is very similar throughout the valley. The only difference that governs the planting of certain varieties of fruit throughout the valley being altitude, since the land in the valley ranges from four hundred to three thousand feet above sea level.

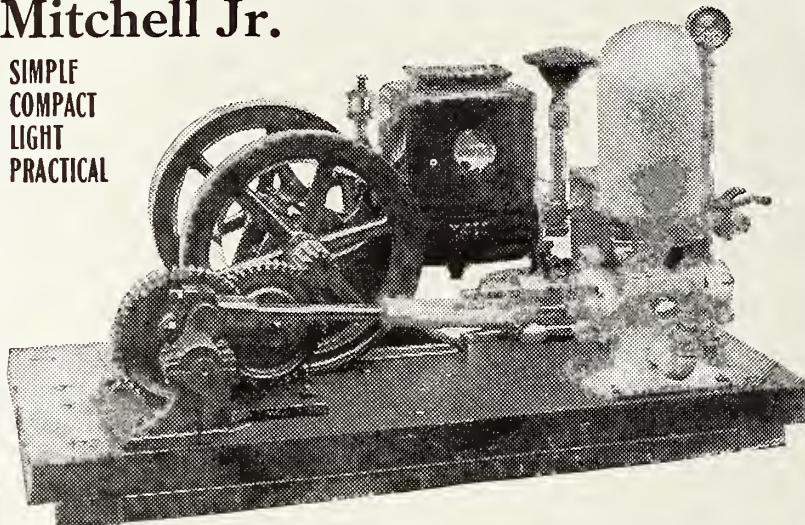
The varieties of fruit best adapted to our state has been covered so far as apples are concerned under the soil conditions. However, in addition to those mentioned there is a possibility for the successful cultivation of many other varieties, and a great deal of attention is being devoted to this experimental work by some orchardists. There is no difficulty in securing reliable and satisfactory information governing this feature by anyone desiring the same. In peaches I find the Elberta, the Early and Late Crawford, Greensboro, Alexander, Solway, Stump and a few other varieties to be best adapted to our section. In cherries, both early and late, sweet and sour, most all varieties do exceptionally well. Virginia is the home of the old Black Heart, which is a seedling of the sweet variety of America. These trees grow to an enormous size and live to an age of from seventy-five to a hundred years. Plums, the Damson, Burbank, Green Gage, Egg and numerous other varie-

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This photograph was taken in Mr. H. W. Pealer's orchard at Hood River. The sprayer used is the "New Way" Twin Cylinder Success. Photograph loaned us by the New Way Motor Company, Lansing, Michigan





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ties, including nearly all the Japanese varieties, are well adapted to our state. In grapes the Delaware, Concord, Worden, Niagara, Catawba, Moore's Early, and in the tidewater district the Scuppernong. Pears, Kieffer, Seckel, Le Conte and other varieties. In other small fruits practically all varieties thrive in our state. Therefore, we have such a great diversity of varieties of all kinds of fruit that no one need devote himself to any particular kind, since it has been demonstrated that all of these grow to the highest perfection and are long lived.

I have endeavored to briefly cover the questions asked by my numerous correspondents, but if anyone desires further information on any subject governing fruit culture in Virginia I shall be only too pleased to answer their inquiries. With the markets at our door and the Virginia product commanding a price equal to that of any other fruit, with long growing season, a large population uneducated to the consumption of fruit, cheap lands, high grade labor at moderate prices, there is no reason at all why Virginia, in the near future, should not be the foremost apple growing state of the Union. Her development is along safe and conservative lines, her growers are taking an ever increasing interest in the cultivation of better fruit, and whereas the "First Fruits of Virginia" have long been famous beyond the portals of our nation, still there is work to be done in the stimulation of an industry which is still in its infancy.

#### HE'S TAKIN' BETTER FRUIT

(By W. H. Walton.)

Summer's comin' and insects too, and codlin' moth to boot;  
But, say, I ain't a worryin' none, for I'm takin' "Better Fruit."

Last year them bugs was awful bad, but now they've had to scoot;  
I'm wised up now—know what to do—been readin' "Better Fruit."

I uster think this sprayin' talk—like many ernother galoot  
Was mostly wind, but, say, it ain't; found out in "Better Fruit."

See them trees, don't they look fine, from tip-top branch to root?  
You bet they do; no bugs or scale; sprayed by rules in "Better Fruit."

This magazine is helpin' me; its horn I plumb must toot,  
For things is comin' my way now on account of "Better Fruit."

My crop'll pay me well this year—in fact I'll have the loot.  
No use to explain—you know the rest—subscribe for "Better Fruit."

#### Editor Better Fruit:

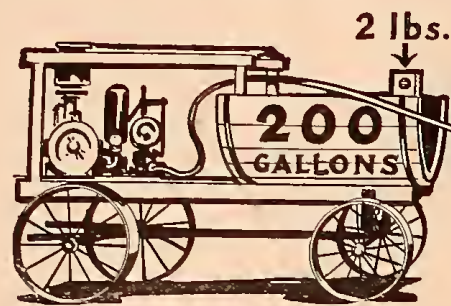
Here is a compliment on the "true to life-ness" of your last issue. I took it home Sunday to read and showed it to my boy two years old; he grabbed it and bit at the apple and got mad at me because he could not eat it. On reading "Better Fruit" I find that the true value is in the meat and I value, appreciate and thank you for the solid worth of your magazine. Here is my \$1 for next year, as I believe my subscription expires in February. Why did you not come to our annual meeting of horticultural society and shake hands with your friends in Virginia. Many of us here would like to know you, so please remember that our latch string is on the outside for you and that a hearty welcome awaits you among the apple growers in this valley. Yours very truly, H. M. Magie, secretary Waynesboro, Virginia, Board of Trade.







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Its use, dating back to 1907, has resulted in a uniform record of success, and we absolutely guarantee "Ortho 40" to more completely control the codling moth than any other compound known to horticulturists.

For complete information regarding "Ortho 40," and its remarkable results, sign and mail return coupon today.

## "Ortho 40" Kills the Worms and Does It Quickly

The greatest pest of the apple grower is the codling moth. Horticulturists and entomologists have given years to the study of this pest, and its life history is well known.

Its greatest havoc is wrought at two distinct seasons of the year. The first is in the spring. The second, during the months of July and August, when the second generation of worms are hatched and eat their way into the heart of the apple.

The time when spraying is effective is short, and a poison of more than ordinary deadliness is necessary to stop the codling moth. Arsenic has been found to be the only effective poison for combatting it. Pure arsenic dissolves readily in water, burns the foliage and injures the soil, thus making its use impracticable. Many arsenical compounds have been tried, and those that would kill the worms, damaged tree and soil.

After long and costly experimenting a compound was invented containing zinc arsenite. It is practically insoluble in water, yet when eaten by the worms is at once dissolved with deadly and almost instantaneous effect. This compound is offered to the apple grower under the name

## "Ortho 40"

and its results are guaranteed when used as directed. It has been used in various sections from California to Colorado since 1907, and has never failed to absolutely control the codling moth wherever tried.

One Watsonville grower offered a dollar for every wormy apple that could be found in his forty-acre orchard after he had sprayed with "Ortho 40." We offered another dollar. Only two wormy apples were found in forty acres.

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## Fruit and Vegetable Flavors In the Human Body

By Thomas T. Kerl, Cœur d'Alene, Idaho

**E**NORMOUS as have been the strides in chemistry during the past twenty years, there is much in the life processes of human beings and of animals which is unknown. We can guess at many things, but make proof of few. The use of the fruit and vegetable flavors in the body is one of the things about which we are compelled to guess. The role they play in the body receives very little discussion in physiological chemistries. Bunge says: "Pleasant sensory impressions produce a cheerful frame of mind, and this indirectly tends to act favorably on all the processes of the body." Agreeable tastes and smells stimulate the secretions of the glands. May there not also be other uses in the body for the flavors?

What are the flavors in fruits and vegetables from a chemical standpoint? They are called esters and are alcohols and acids in chemical combination. For instance, isoamyl alcohol and acetic acid or common vinegar when combined form the flavor of pears, isoamyl alcohol and isovaleric acid form the flavor of apples, ordinary alcohol and

butyric acid form the flavor of pine-apples.

When one eats an apple or a pear what chemical reactions may one expect from the flavors? The stomach has in its hydrochloric acid formed by eating salt and the chemical separation of its constituents by the process of ionization. Esters, when brought into weak acid or alkaline solutions, undergo hydrolysis or saponification, that is, they attract water and separate into their constituent substances—alcohols and acids. This separation accomplished, these substances enter the blood and are slowly oxidized by the oxygen brought from the air by the red corpuscles of the blood. The first product of the oxidation of an alcohol is an aldehyde, the second product is an acid, and the final breaking down of the acid results in carbon dioxide and water, which is thrown off by the lungs, skin and kidneys.

Alcohols and acids are anti-bacterial substances and the aldehydes are quite destructive to all bacteria. In the serum or watery part of the blood are substances which enable the white corpuscles of the blood to consume bacteria that invade the tissues. The question naturally arises, may not the fruit flavors hydrolyzed and oxidized be some of those substances? Do the fruit flavors not serve the purpose of immunizing us against diseases due to bacterial infection? Does the body not need the flavors of fruits and vegetables for its proper functioning? Why do all people crave highly flavored fruits? An apple without flavor is quickly discarded. Is not the universal craving for alcohol a natural appetite? If the natural appetite for flavors is not satisfied, resort is had to artificially prepared alcohols. Do not the hard drinkers, Scotch, Swedes, Russians, live in climates where few fruits are produced or consumed or the fruits grown are low in flavor?

It may be thought that the above suggestions do not accord with the well known fact that consumers of alcoholic liquors, instead of being immune, are

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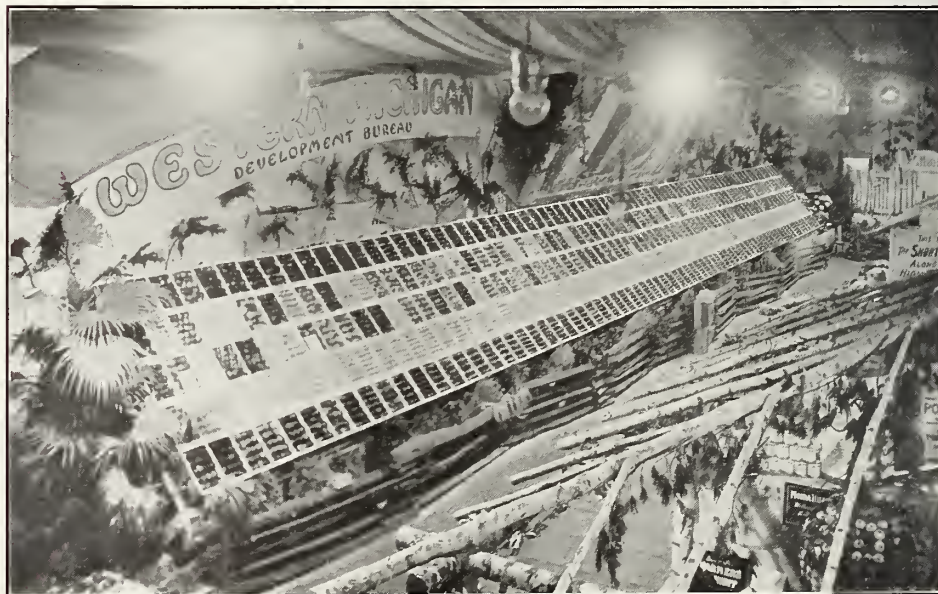
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peculiarly prone to diseases. The body elaborates carbolic acid in minute quantities—probably as an anti-bacterial substance, but no one would think of consuming carbolic acid to ward off diseases. Sulphuric acid and anilin are both poisons, but if chemically combined to form sulphanilic acid, large quantities may be taken without injury. May this not be the case with esters? Their use in minute quantities as they occur in fruits is beneficial, but the use of their constituent parts is harmful. The localization of chemical substances in the body, such as the oxidation products of alcohol, is attended with great difficulties, but there can be no question about the importance of the appearance of chemical substances at the right place in the body. Amyl alcohol is much more poisonous than common alcohol, but when it is elaborated in the body out of fruit flavors it probably serves some useful purpose. Does the true remedy for alcoholism not lie, in part, at least, in the moderate consumption of fruits? Has anyone ever seen a heavy beer drinker who was also a free user of fruit? The use of alcoholic liquors is in part psychological and in part physiological.

Oregon apples and their superior keeping qualities have scored another point. Two boxes of fine Hood River Spitzengerger that were shipped October 30 by M. L. Gumbert to his daughter, the wife of Ensign R. R. Smith on the U. S. gunboat Monterey, reached her in Amoy, China, after having been in transit for two months and a half, part of the time in the fierce heat of the tropics. They arrived in perfect condition and were pronounced by the captain and officers who were permitted to share them the finest apples they had ever seen. Mr. Gumbert received a letter this week from his daughter, dated January 18, which told of the arrival of the fruit the day before. "Every apple," said she, "was perfect; and such beauties! We gave some to the captain, and he said they were the most gorgeous he had ever tasted. Every one is surprised that they kept so well after having encountered the heat of the Philippines." The apples were shipped from Portland to San Francisco by Mark Levy & Co., and thence to Olongo, Philippine Islands. The Smiths in the meantime had been transferred to China, where the apples followed them.—Portland (Oregon) Telegram.

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Michigan Land and Apple Show, Grand Rapids, November 7-11, 1911

## Setting Out A Peach Orchard

Albert F. Tenney, in New England Homestead

**S**PREAD a good dressing of manure on the ground and plow the land as deep as possible early in the spring. After the ground has been carefully prepared set the trees fifteen feet apart each way. In setting the trees dig a large hole and prepare the trees by cutting the injured roots back to live wood. Keep the roots wet and set them as rapidly as possible. The best loam should be well packed about the roots of the trees, and when the holes are half full about six quarts of wood ashes thrown into the hole will aid materially. The remainder of the earth is packed in carefully. The top of the ground can be left loose as a sort of

mulch. I believe large trees are best. After being set out they may be headed down closely, the limbs being started three feet from the ground. Start three different limbs at as many different places on the trunk to form leaders, and if possible encourage a vase form for the trees. If snow is inclined to drift on any part of the hill, the trees should be tied to stout stakes.

One of the greatest essentials of peach culture is to cultivate early. Trees without cultivation are just like animals without food. To my mind there is no better crop for planting in a young orchard than beans. When the trees get tall sweet corn will not injure them if not planted too closely. If the soil is very poor cowpeas or vetch will benefit the trees materially, and can be sown as late as July. Do not plow them in until the following spring. Barnyard manure will produce good growth of trees and encourage good fruit, but the trees must be watched closely for the indication of too much nitrogen, shown by rank growth.

I believe the cheapest and best commercial fertilizer is low-grade sulphate potash, 300 pounds per acre, and basic slag meal, 600 pounds per acre. If wood ashes can be obtained for about 15 cents per bushel, 50 bushels to the acre, with a little less basic slag, can be used to excellent advantage. Late in August I head down my trees, using ordinary hedge shears, aiming to leave an umbrella-shaped top. This hardens the new wood. Early in March I go over all the trees, cutting out superfluous or dead wood, using a saw for the large limbs, but double cutting pruners for small limbs. I never cut down a young tree that bears poor fruit. It is better

to bud or graft it. The latter operation must be done very early in spring, and the stalks tightly wound with cloth after being waxed.

For the peach crop the spray pump is a whole insurance company in itself, and not in the trust. Just as the buds are swelling in April I use three pounds bluestone, six pounds lime and fifty gallons water. If brown rot prevails the previous year, I use bordeaux at the rate of 4-4-50. When the calyx has dropped from the little peach I use a 2-2-50 formula, with some poison other than paris green added. Ten days later this may be used again, unless the leaves have been injured by the former spraying.

Masses of gum and sawdust at the base of the tree indicate borers, which must be cut out during the spring and fall. Be sure to thin the fruit about July 1. Every small or poor peach should be pulled off, and even good ones if necessary. The net profit for large peaches, as compared with small ones, is often three times as great.

"Northwest"  
trees  
are best

"Northwest"  
trees  
are best

We have for the coming season a complete line of

### NURSERY STOCK

Including everything handled in the nursery line

Write for our new prices and catalog

**NORTHWEST NURSERY CO.**

North Yakima, Washington

AGENTS WANTED

## Finest Apple Orchards in America for Sale

The famous Piedmont section of Virginia, fifth apple growing state in the Union. Some of these orchards cultivated, others young trees. Some not cultivated. Prices range \$10, \$15, \$20, \$25 per acre and up. All varieties thrive. Albemarle Pippins, York Imperials, Grimes Golden, Winesap, Ben Davis, etc. All varieties peaches. Close markets, ideal climate, evenly distributed rainfall, plenty sunshine, low freight rates, high prices for products. Unexcelled educational facilities. The place to make your home. Write today for booklet. Address Dept. 14

CHAMBER OF COMMERCE, Lynchburg, Virginia

## Stranahan & Clark

DEALERS IN

Commercial Fertilizers  
Land Plaster  
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HOOD RIVER, OREGON

## Electric Wiring & Supply Co.

Builders of Isolated Plants  
Electrical Contracting

J. M. GEIGER, E. E., Manager  
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HOOD RIVER, OREGON



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Established 1859

Oldest bank on the Pacific Coast

PORTLAND, OREGON

Capital fully paid - - - - \$1,000,000  
 Surplus and undivided profits - - - 800,000

## Officers:

W. M. Ladd, *President*  
 Edward Cookingham, *Vice President*  
 W. H. Dunckley, *Cashier*  
 R. S. Howard, Jr., *Assistant Cashier*  
 J. W. Ladd, *Assistant Cashier*  
 Walter M. Cook, *Assistant Cashier*

INTEREST PAID ON TIME DEPOSITS AND SAVINGS ACCOUNTS

Accounts of banks, firms, corporations and individuals solicited. Travelers' checks for sale, and drafts issued available in all countries of Europe.

## New Residents

We are always pleased to extend courteous assistance to new residents of Hood River and the Hood River Valley by advising them regarding any local conditions within our knowledge, and we afford every convenience for the transaction of their financial matters. New accounts are respectfully and cordially invited, and we guarantee satisfaction. Savings department in connection.

**Hood River Banking and Trust Company**  
 HOOD RIVER, OREGON

## Spitzenberg or Spitzenburg

From Portland (Oregon) Oregonian, January 1, 1911

SHOULD the last syllable of Oregon's favorite apple be spelled with an "e" or a "u"? While The Oregonian is unable to make a definite decision, it leans toward Spitzenburg. This disputed spelling came up during the recent apple show, and The Oregonian was appealed to for a ruling. The most careful pomological publications in Oregon use "e." Several Eastern catalogues always print it with "u." For further light on the subject, The Oregonian addressed the Department of Agriculture at Washington asking particularly whether there was weight of authority for either spelling. This answer came:

"It is rather difficult to say whether the correct spelling of the apple in question is Spitzenburg or Spitzenberg, as there does not appear to be any well authenticated history of the origin of this variety. In the older pomological publications the form of spelling appears to be pretty nearly equally divided. In some cases it is spelled Spitzenburgh. However, the form which appears to have the most general approval is Spitzenburg.

"In this connection it may not be inconsistent for me to call your attention to the fact that the name 'Esopus' is the accredited name for this variety, in accordance with the rules of nomenclature adopted by the American Pomological Society, and these are the rules which largely govern the use of varietal names at the present time.

"In the Northwest the name which is almost invariably used is Spitzenburg, while in the older fruit growing sections of the country where this variety is grown it is more commonly referred to by the name 'Esopus.' Not infrequently the two names are used in combination."

In the interests of uniformity Oregon should adopt one or the other spelling. It is The Oregonian's rule to follow the nomenclature that the government employs. While the agricultural department is not positive, it favors "u." So far as Oregon is concerned the State Horticultural Society at its next meeting could declare which of the two vowels whose sounds are identical should be used.

Professor W. B. Lanham, horticulturist with the Lewiston-Clarkston Improvement Company, has resigned his position and will leave shortly for Missoula, Montana, where he will be identified with an orchard proposition consisting of 1,500 acres. This tract is not for development and sale purposes, but is being raised for a commercial orchard. About one-third of the tract has been planted and the remainder will be completed this year. In speaking of the move Mr. Lanham said he was reluctant at leaving Clarkston at

this time, but his new position offered him greater possibilities and he had decided to make the change. The work done on the Heights has all been under the direction of Mr. Lanham, and he has accomplished much for the betterment of orchard and fruit conditions while being identified with the work in Clarkston. The Heights tracts give evidence of the thorough manner in which the horticultural department of the company has prospered.—Exchange.

It is usually necessary to cultivate from six to seven inches in depth to preserve the proper moisture. As a rule we plow from five to seven inches, and then start shallow work during the season, gradually going deeper. This holds the moisture in good shape.

CAPITAL STOCK \$100,000 SURPLUS \$22,000

# First National Bank

Hood River, Oregon

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 J. W. HINRICH, *Vice President*  
 E. O. BLANCHARD, *Cashier*  
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Thorough and Conservative  
 Assets over \$500,000

Savings Bank in connection

LESLIE BUTLER, *President*  
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Established 1900

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HOOD RIVER, OREGON

Capital fully paid - - - \$100,000

INTEREST PAID ON TIME DEPOSITS

We give special attention to Good Farm Loans

If you have money to loan we will find you good real estate security, or if you want to borrow we can place your application in good hands, and we make no charge for this service.

THE OLDEST BANK IN HOOD RIVER VALLEY





The All Important  
**QUESTION of  
QUALITY and the  
QUESTION of  
QUANTITY**



**The Moncrief System of Pedigreed  
Fruit Tree Growing Makes Crops of  
Both Quality and Quantity Certain**

**N**OTHING in all fruit growing has made it so unprofitable as drone or poor bearing trees—poor either in quality or quantity of fruit, or both. Our announcement that by pedigreed breeding or growing, we had found the sure method of eliminating such vital causes of failure, heralded a godsend to you, Mr. Fruit Grower.

We still have a supply of extra quality stock, grown exclusively by our Pedigreed Method of standard varieties only. Every tree has a pedigree and will make a gold mine in your orchard.

Now is the best time in all history to go into fruit growing—apples and all good fruit will be even higher—fancy fruit a big price, and there's a fortune in the business.

But, be sure you start right—get good trees, or you will meet sure disaster. You can't possibly be sure with trees unless they have heavy quality and quantity bearing parentage. Write for our

**Beautiful—Instructive—Interesting Book—  
"Pedigreed Horticulture" FREE!**

**Winfield Nursery Company**  
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Originators and Growers of Pedigreed Nursery Stock



Apples from the Cove Orchard near Culver

## Evaporators to be Built in Yakima Valley

From North Yakima Herald

**F**IVE evaporating plants are to be erected in Yakima County by the Washington Fruit Evaporating Association, which is a subsidiary organization of the Washington Fruit Distributing Association, and of which W. W. Butler of Grandview is the leading Washington representative. The money is largely outside capital. The plants, according to Mr. Butler, will be three in the territory below Union Gap and two in the territory above the gap. They will cost on an average of \$15,000 each; will operate approximately five months each year, will employ twenty or twenty-five of a crew each and will expend in money for labor practically half a million dollars each season.

As an indication of the character of the possibilities, Mr. Butler, who was in the city Monday a guest at the Yakima Hotel, produced a few figures he has been collecting. There are in this valley, according to Commissioner of Horticulture Huntley, 3,500,000 fruit trees. Taking half of these to be of bearing age and yielding five boxes of fruit to the tree, there is a total of 8,750,000 boxes of fruit, of which at least one-third, or a total of 2,916,000 is not packed and marketed. This figures to a total of 76,916 tons, which will reduce to 10,000 tons of evaporated fruit, or thereabouts. At the present market figures of such stuff it should

have a value of \$2,000,000, and the handling of it should require the payment of a half million dollars for the labor involved.

There are now wasted, according to Mr. Butler, a million dollars' worth of fruit annually in this county, and this alone, in addition to wasting such a total, spends annually \$600,000 for cured fruits in California. As a further indication of what the processed fruit industry means, Mr. Butler says that last year the export business of California in those lines, and there are no more trees in that state than in this, was a total of \$10,300,000 in value, and that the total of canned and evaporated fruit in 1910 was \$27,000,000. Here it amounted to absolutely nothing, that entire source of profit being lost. In California the evaporators pay from \$7 to \$10 per ton for their fruit, and Mr. Butler says that the expectation would be to pay about the same figures here. The work on construction, he says, will be taken up in time for the operation of the evaporators by about August 1.

If we were selecting fillers for Yellow Newtowns, our choice would be for Wageners, Ortleys, Winter Bellflower, or good white pears, either dwarf or standard varieties. We would not use dwarf pears if the land was strongly sand.

## Spruce Box Shooks

IN CAR LOADS

## NORTHWESTERN LUMBER COMPANY

HOQUIAM, WASHINGTON

## Prompt Shipments

## THINGS WE ARE AGENTS FOR

Knox Hats

Alfred Benjamin & Co.'s Clothing

Dr. Jaeger Underwear

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## Buffum & Pendleton

311 Morrison Street  
Portland, Oregon





## Thorough Spraying An Absolute Necessity

By Andrew G. Samuel

A noted horticulturist, in an able address on the subject of spraying, said "there never was a spraying failure," and going on to explain this remarkable statement, he made it plain that all spraying did some good, but that the measure of success resulting from the investment and labor was in ratio corresponding to its efficiency.

We all know that the measure of success in all business, in any particular line of industry you can mention, is governed entirely by the thoroughness as well as the skill by which it is pursued.

I have been a student on the subject of horticulture for a great many years and have been identified with every movement of advancement and progress in horticulture, as close as most of the horticulturists in this country, and I am frank to state that I believe that we have had more "fiddling" in the spraying work than in any other line connected with fruit growing.

I am not under-estimating the recklessness and unbusinesslike and haphazard methods that we have given to cultivation, packing and other parts of the fruit growing work, and yet I repeat it—I believe we have given less thoroughness and intelligence to spraying than to any of the other lines.

No doubt there is a place for the ordinary hand pump, barrel sprayers and other styles of small capacity, but to try to spray ten, twenty or more acres of orchard with one of these hand devices is actually like the man who tries to reap a twenty-acre crop with a hand sickle, or like the man who tried to raise a large acreage of corn with a hand hoe.

What we must have for big work is big implements, and spraying ten acres or more of

orchard thoroughly is a big job, and needs a machine of great capacity and sufficient power. The man who tries to spray a large orchard with a poor sprayer doesn't make any money at it. Every dollar saved in the price of efficient equipment is lost ten, twenty or one hundred-fold in the crop.

The markets of this country are going to demand more perfect fruit. The size, flavor, color and the packing will have a very vital part in the sale, but that which shall count more than any other one item will be the freedom from worms and other deformations.

There are a number of good power sprayers on the market, and their cost is really a very insignificant sum compared with the advantages and the profit-making qualities.

The following from the pen of one of the best fruit growers in the State of Ohio is convincing: "This is repeated every season, hundreds, yes, thousands of times, but the men who are going to succeed in the fruit growing in the future are the men who will listen to the voice of reason and will not let such lessons be repeated in their own orchards."

Here's to the success of thorough spraying, the great efficient weapon by which we can double the value of the crops which we do raise, with such little increase of time and labor.

Vaughan's Seed Store is the oldest (thirty-five years) and best known in the West, and has maintained a thriving branch house in New York city for the last twenty years. Since its pioneer days the store has held the confidence of both the general public and the market gardener, the nurseryman and the florist. Its extensive connections in all parts of America, Europe and the Orient enable Vaughan's Seed Store to select for its customers the best seeds, bulbs, plants and shrubs from every land.

The black rot, or black spot, as it is frequently called, on apples, is due to a fungous disease, which is spread during the summer time. This can be practically eliminated by thorough spraying with bordeaux mixture the latter part of June or the first of July. The only difficulty is that the bordeaux sometimes scorches the fruit, so we are now working on a better spray for that difficulty.

Usually 20 degrees below zero will very seriously injure the fruit, though when it is well hardened up the wood will stand from 20 to 30 degrees without serious injury. It all depends upon the ripeness of the wood. I have seen 10 below in midwinter kill the peach buds in New York, and again have seen 20 below which did not hurt the trees at all.



Personal exhibit of J. R. Conway which was awarded grand prize at the Twin Falls Fruit Fair, Twin Falls, Idaho, October 17, 18 and 19, 1911. Bird pictures made of seeds, stork holding Twin Falls County Fruit Association, which was formed last winter. All other decorations in picture made of seeds, straw and corn husks. Apples all Rome Beauty and Jonathan, picked from an orchard of sixty acres planted in spring of 1908. Decorations made by Mrs. Conway. (This cut was received too late for publication in last issue)

A Reputation to Sustain

## Vineland Nurseries Company

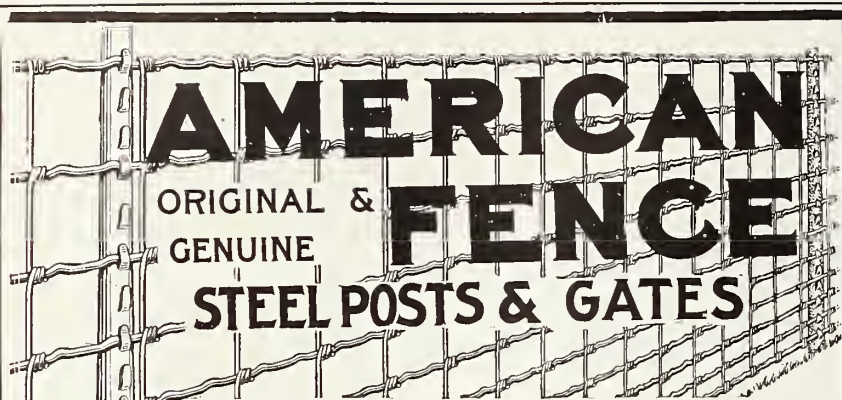
Clarkston, Washington

PROPAGATORS OF

Reliable Nursery Stock

All stock budded from bearing trees, fruit and ornamental





**T**HE Fence adds value to the farm. Keep fences in order and the house painted. It indicates prosperity.

Here's an instance: Not long ago a little farm with shabby buildings and fences rotted down, sold for a song. The new owner had the right idea. Buildings were painted. Wire fences were erected to divide the farm into small fields in order to change pastures and rotate crops systematically. Then circumstances compelled him to sell out. The cost of painting and fencing was less than \$200.00. The farm sold for four times its purchase price. Appearances *do* count.

**A**MERICAN FENCE is made of large, stiff wires, galvanized heavily, having the American hinged joint (patented), a fabric most flexible and wear-resisting. A square mesh fence of weight, strength and durability—three great needs in farm fences.

### Dealers in Every Place

where farm supplies are sold. Shipped to them direct from mills in carload lots, thus saving freight charges and enabling dealers to sell at lowest prices, giving buyer the benefit.

Send for copy of "American Fence News," also book "How to Make the Farm Pay," profusely illustrated, devoted to the interests of farmers and showing how fence may be employed to enhance the earning power of a farm. Furnished free upon application.

F. Baackes, Vice Pres. & Gen. Sales Agt., AMERICAN STEEL & WIRE COMPANY, Chicago, 72 W. Adams St.; New York, 30 Church St.; Denver; U. S. Steel Products Co. San Francisco, Los Angeles, Portland, Seattle.

planted in 1904 and that the amount planted has increased very substantially each year except in 1909, when it decreased slightly. The annual percentage of increase since 1903 has been as follows: In 1904, 36 per cent; 1905, 38 per cent; 1906, 35 per cent; 1907, 35 per cent; 1908, 32 per cent; 1909, 23 per cent; 1910, 31 per cent. Arranged so as to show most plainly how rapidly the amount of land set to orchards has increased each year, the number of acres planted annually, beginning with 1904, follows: 514, 737, 941, 1,256, 1,564, 1,478 and 2,444.

We are often asked if any other fruit than the peach will pollinize the peach. Some forms of plum, some varieties of apricot, and some varieties of nectarines will. Cherry will not pollinize peach. Some say it will, but we have not been able to determine it experimentally. Most scientists say it will not. Others claim that pollenization takes place between pears and apples, cherries and plums, and cherries and peaches. We have serious doubts, however, as to the correctness of these deductions.

HOOD RIVER SPRAY MANUFACTURING COMPANY

Manufacturers of the Famous  
NIAGARA LIME-SULPHUR SPRAY

Portland, Oregon, February 26, 1912.  
Editor Better Fruit:

We wish to express our appreciation of the result obtained through using "Better Fruit" as an advertising medium. We have used "Better Fruit" columns for advertising ever since we have been manufacturing lime-sulphur solution in Hood River. We are glad to say that we get a greater number of really interested inquiries traceable to advertising in "Better Fruit" than from any other medium which we use. Your publication is without doubt the classic fruit magazine of the United States. Wishing you continued success, we are very truly yours, Hood River Spray Manufacturing Company, by Jas. R. Fordin.

## FOR SALE!

79-acre fruit ranch, approximately 25 acres under cultivation; 6-room, two-story house; acetylene gas, telephone, R. F. delivery daily, barn, outhouses, 4 horses, pigs, 2 cows, chickens, all necessary implements, gasoline sprayer, etc. The crop this year will bring from 2,000 to 2,500 boxes apples. About 13 acres alfalfa. Price and terms reasonable. This valley, near Wenatchee, took four first carload prizes at National Apple Show, Spokane, last fall.

HALL & FOSTER

R. F. D., Farris, Washington

## Nearly 13,000 Acres of Orchards at Hood River

From a Report by County Assessor Wickham

**T**HAT there are at present 10,354 acres of land in the county planted to orchards that are a year or more old, has just been determined by County Assessor Wickham, who has compiled this amount from the assessment rolls. The figures show that 2,444 acres were set out last year, and if the percentage of increase this year was correspondingly large the total orchard acreage in the county today is close to the 13,000 mark. Mr. Wickham has segre-

gated the orchard acreage according to the age of the trees. There are 2,444 acres of one-year-old trees, 1,478 acres of two-year-olds, 1,564 acres of three-year-olds, 1,256 acres of four-year-olds, 941 acres of five-year-olds, 737 that have six-year-old trees, 514 acres that have seven-year-old trees, and the total acreage of orchards that are eight years old or older is 1,420.

The figures show that the acreage planted last year was five times that

## Car Lots Our Specialty

**John B. Cancelmo**

127 DOCK STREET  
PHILADELPHIA

**FANCY BOX APPLES**

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT



*"An Apple Show where Apples Grow"*

Apple Annual

# California Apple Show

Watsonville, California  
OCTOBER 9-14, 1911.

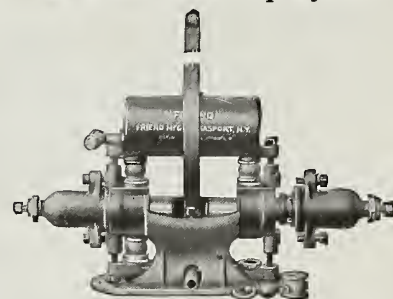
**Certificate of Award.**

*J. C. Pearson Co.*  
Received  
*Highest Award*  
for Display of  
*cement-coated nails*  
in the Industrial Department of the  
*California Apple Show*  
Watsonville, Cal., October 9-14, 1911

Apple Annual Association  
*A. D. Hoessner* President  
*E. J. Sedman* Secretary  
*Otto Rasmussen* Chairman of Awards  
*C. R. Greisen* Superintendent of Exhibits

FIRST PREMIUM  
THE CALIFORNIA APPLE SHOW  
WATSONVILLE CALIFORNIA  
1911

## A Good High Pressure Hand Pump is Better than a car load of Poor Power Sprayers



"Friend" Fig. 15

The Strongest, Simplest, Easiest Working  
**MOST DURABLE HAND PUMP ON EARTH**  
No exceptions. Has "FRIEND" Power Sprayer features—quick detachable valve seats, quick adjustable and accessible packing. A high even pressure easily maintained.



There's a SECRET at the Arrow Point

Thousands of Up-To-Date Fruit Growers are saying, "FRIEND NOZZLES ARE SUPERIOR." Why is this?

SIMPLY because they GET THERE. An IMITATION indicates that somewhere there is an ORIGINAL. Look on the NOZZLE you use and see if you can find the NAME and the word "PATENTED." The "FRIEND" is the ORIGINAL large Nozzle doing away with the clutter. "FRIEND" Nozzles have no HOLES, no HOOPS, nothing to catch, drop or clog. They make the finest MUST-LIKE Spray, driving it farther into the trees than the cluster.

The "REGULAR" is for ordinary work. State which is wanted. Satisfaction guaranteed or money refunded. Price, \$1.00 each, postpaid.

**"FRIEND" MFG. CO.**

Gasport, Niagara County . . . New York

Power Sprayer orders to date beat all previous records. Not too late now, but don't wait. Our new Catalog is ready.

**"FRIEND" MFG. CO., Gasport, N. Y.**  
Manufacturers  
"World's Best" Hand and Power Sprayers

## Facts and Figures Regarding Hood River

From Hood River Commercial Club Bulletin

**M**ANY questions are asked of the information department of the club. Following are some of the more pertinent inquiries of recent date and the answers as sent to those asking the information:

1. What is the total area in trees? 13,000 acres. 52,000 acres in the Hood River Valley.

2. What percentage apple trees? 25 per cent of the total acreage.

3. Price of land and water rights? From \$500 to \$2,000 for orchards planted to good commercial varieties. \$50 to \$250 for undeveloped land. Up to \$500 for land for orchard, with scenic view in part. Water from \$3 to \$8 per inch, and but little or no irrigation used for apples. Sometimes one-quarter to one-half inch on old or full bearing orchards during the season. One inch per acre for small fruit and alfalfa in a season.

4. Any government land in Hood River County? 840 acres, broken, hilly,

mountainous. Land office, The Dalles, Wasco County, Oregon.

5. Altitude or district? From 100 to 3,000 feet.

6. Production each year? In 1910, 600,000 boxes; 1911, 200,000 boxes. Estimated in 1912 from 800,000 to 1,000,000 boxes.

7. Leading varieties? Spitzenberg, Newtown, Ortley, Arkansas Black.

8. Most profitable varieties? Newtown, Spitzenberg, Ortley and Winter Banana.

9. Age of oldest orchard? About fifteen years.

10. Average temperature, summer and winter? January, 1910, 27.2 degrees; July, 1910, 68.6 degrees; annual mean temperature, 1910, 50.4 degrees; minimum, January 4, 1 degree; maximum, July 10, 101 degrees. Annual precipitation 21.47 inches, departure from normal, -14.64 inches. January, 1909, 24.2 degrees; July, 1909, 65 degrees; annual 48.6 degrees; maximum August 17, 101

# Go South Sir!

**Farm Land**  
**\$10 an acre**

up can be purchased in the Southeast along the Southern Railway, Mobile and Ohio R.R. Ga. So. & Fla. Ry. supporting good

churches, schools, stores and improved highways.

**LIVE STOCK, POULTRY AND DAIRYING** business pays big, and is conducted at smaller cost than in other sections of the country. Luxuriant pasturage and green fields the whole year 'round make this possible.

**ALFALFA GROWS** abundantly in nearly all parts of the Southeast. Many acres produce 4 to 6 tons, selling locally from \$14 per ton up.

**APPLES, FRUIT, TRUCK AND COTTON** are other big paying crops. Apple orchards net \$100 to \$500 an acre, and truck gardening \$200 up.

**CLIMATE UNSURPASSED**—Every day in the year one can work in his fields. These long seasons allow raising two and three crops from the same soil each year.

Subscription to "Southern Field" and book-lets on States of Va., N. & S. Car., Ga., Fla., Ala., Miss., Tenn. and Ky. sent FREE.

M. V. RICHARDS,  
L. and I. Agent,  
Southern Railway,  
Room 13, Washington, D.C.

# and Grow Rich



degrees; minimum January 12, -18 degrees. Annual precipitation, 26.88 inches; -9.95 departure from normal. Normal precipitation yearly about 36 inches. 1908, minimum January 31, 13 degrees; maximum July 20, 101 degrees; monthly mean temperature for January, 35.7; monthly mean for July, 70.7 degrees. The extremes of heat and cold last but a few days each season.

11. What is the smallest acreage a person should attempt to have in apple orchard? Not less than five acres. Ten would be better.

12. What are the average net returns per acre for trees at five years? At eight years? At twelve years? \$16, \$200, \$300. A conservative estimate.

13. What is estimated cost of production per box? 60 cents.

14. Where have been the principal markets of the Hood River fruit? London, Liverpool, Hamburg, New York city, Chicago, Milwaukee, Minneapolis, Rockford, Texas and other Southern States and Middle West and Northwest points.

The improvement of farm crops through the selection of right seed is a modern and essential element in agricultural progress. To select better seed is the farmer's mission, and it is one of the best investments that he can make. Much interest has been manifested during the last year or two in regard to the pure seed law of the State of Washington. This law was passed by the state legislature in 1909, but owing to lack of an appropriation was not enforced until 1911. The requirements of the new law are reasonable and at the same time give ample protection to the farmer, guaranteeing to him freedom from obnoxious weeds and adulteration. There can be no question but that established seed houses, all of them, would refuse to buy or sell, knowingly, seed containing such weed as dodder, wild mustard or Canada thistle. From an entirely selfish motive, no seed house could afford to sell seed that would be a poor advertisement. But it is not a question of whether the seedsman intends to sell foul seed, but whether he is in a position to know whether he is selling seed containing weed seed. It might be assumed that any intelligent man in the seed business would know whether he was selling clean seed or not, but it is a fact that there could be, for instance, five per cent dodder in red clover or alfalfa, yet the seed might appear to be of the finest quality, and only a careful examination, made by sampling the entire shipment and then analyzing under a glass, would disclose the foul seed. Realizing that there is a demand for expert knowledge of the purity of seeds, The Chas. H. Lilly Co. has established a laboratory for this purpose. This laboratory, also their trial grounds, have been placed in charge of N. D. Vail, B. S., a graduate of the Oregon State Agricultural College. Mr. Vail has also taken a special course in seed testing under the tuition of Professor H. D. Scudder, head of the branch seed testing laboratory of the United States Department of Agriculture. Mr. Vail, with the aid of his assistants and the special delicate instruments at his command, analyzes every sample of seed offered by the growers, and also the stock as received either from the growers or from The Chas. H. Lilly farms and trial grounds.\*

## S. E. Bartmess

Undertaker and  
Licensed Embalmer

For Oregon and Washington

Furniture, Rugs, Carpets  
and Building Material

HOOD RIVER, OREGON

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TAKE THE  
Standard Railroad of the Northwest



**To Chicago** North Coast Limited—by way of Minneapolis, St. Paul, Milwaukee. Drawing-room, Compartment, Standard and Tourist Sleeping Cars, Coach, Diner and Observation-library Car with barber and bath. Runs via Northern Pacific and Chicago & North Western lines.

Atlantic Express—by way of Minneapolis, St. Paul, Aurora. Standard and Tourist Sleeping Cars, Coaches and Dining Car. Runs via Northern Pacific and Burlington lines.

**To St. Louis** Mississippi Valley Limited—similar to Atlantic Express. Runs via Northern Pacific and Burlington lines.

## Low Westbound Colonist Fares

NOW IN EFFECT

If you are sending East for friends, you can purchase tickets from any Northern Pacific representative. We will arrange prompt delivery to parties in the East. Write and let us explain

## Summer Excursion Round Trip Fares to the East ON CERTAIN DATES

Fares quoted to and from all points and full information gladly furnished on application.

A. D. CHARLTON

ASSISTANT GENERAL PASSENGER AGENT  
PORTLAND, OREGON

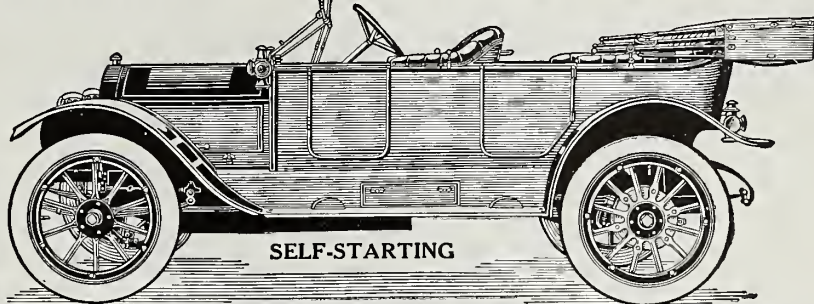
Annual Rose Festival, Portland	June 10-15, 1912
Montanara Feste, Tacoma	June 30-July 4, 1912
Grand Lodge, Order of Elks, Portland	July 9-13, 1912
Golden Potlatch Carnival, Seattle	July 15-20, 1912
Yellowstone National Park	Season June 15-Sept. 15, 1912
Panama-Pacific International Exposition, San Francisco	1915

# NORTHERN PACIFIC RAILWAY

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# Our 70-Year Reputation for Mechanical Perfection is Behind the **GREATER CASE 40**



The Greater Case—our new self-starting "40"—is a car with a name that for three generations has stood for high-class machinery.

We staked that 70-year reputation—that world-wide prestige—when we entered the automobile field.

And the car on which we risked so much has won new laurels for CASE.

The Greater Case is great in size and magnificent in appearance. It has all the elegance and style and luxurious comfort of the most expensive cars. But the dominant factor in its supremacy is the powerful, silent engine that's under the hood of the Case.

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The engine—rated at 40 horsepower—shows 52 horsepower on brake test.

## A Big, Handsome, Roomy Car

The Greater Case is big and roomy, with a straight-

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## The Case Eagle On Your Car

This emblem on an automobile has the same significance as the **STERLING MARK** on silver. It stands for highest quality and a guarantee that protects. It places at the disposal of the owner of a Case Car our

### Nation-Wide Service

We have 10,000 Case Agents and 65 big Branch Houses scattered throughout the United States and Canada.

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The Greater Case is a high-grade car at a medium price. Fore-door ventilation—combination oil and electric side and tail lamps with storage lighting battery—**reliable self-starter**—36x4-inch tires—120-inch wheel base—11-inch clearance—4½ x 5¼-inch cylinders—Rayfield carburetor—Brown-Lipe transmission—Timken full-floating axles—cellular-type radiator—regulation trimmings—dismountable rims—English mohair top with side curtain and dust hood—high-grade windshield—12-inch acetylene gas head lamps—Prest-O-Lite tank for head lamps—one extra dismountable rim—complete set of tools—jack and tire-repair kit—pump. These are some of the special features that belong to the Greater Case. If you want a lighter, less powerful car, investigate the well-known Case 30.

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**J. I. CASE T. M. CO., Incorporated, Dept. 68, Racine, Wis.**

(28)

## New Fruit Section of the Inland Empire

By H. E. Waterbury, Spokane, Washington

**PASADENA PARK** is a suburb of Spokane, lying about two and one-half miles east of the city limits and bounded on the south by the Spokane River. All the land is irrigated from a gravity canal and is divided into tracts of from one to twenty acres, a large proportion of which are set to commercial apples, varying in age from one to three years. On account of its proximity to Spokane, Pasadena Park holds a very advantageous position both for a suburban home and as a source of supply to the markets of the city. The Pasadena Park Improvement Association was launched on its career November 15, 1911. It might not be strictly classed as a fruitgrowers' association by some, partly on account of the name, which might be deceptive to anyone not fully understanding the sit-

uation, and partly on account of the twofold purpose of the association.

The main purpose of the Pasadena Park Improvement Association is to form a nucleus for a fruitgrowers' association which shall later on unite with similar associations in the Spokane Valley in a district association, and until the first trees are in bearing (a few of them will begin to bear next year), to market produce of various kinds—"truck" and small fruits—in a more advantageous manner, with a special effort toward maintaining a high standard of quality. The other main purpose of this association, one which may for a short time take precedence, is to act as an improvement association in all matters affecting the good of the community, which cannot be satisfactorily disposed of by the individual, such as improvement of

roads, cutting of weeds along the roads, starting a circulating library, etc. The property owners of Pasadena Park have turned out almost to a man, and from the interest shown we look forward to a great success. We feel sure that the association is the only salvation of the fruitgrower, and we are getting busy a little ahead of time, hoping in that way to learn by experience, making our mistakes at a time when they will cost the least. The address of this association is R. F. D. No. 8, Spokane Washington.

The world is progressing; we are going through a state of continued evolution for the betterment of all conditions. Today, the individual is a better man than he was a century ago; business is conducted on a better basis; certain kinds of business find through co-operation they can obtain better success than they can as individuals.



**M**AKE sure of a bigger, more perfect crop at harvest time by careful and thorough spraying during the spring and summer with

## ELECTRO ARSENATE OF LEAD

(THE POWDERED FORM)

Obtain  
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Perfect Fruit  
this year

By our Electro process a greater percentage of arsenic is combined properly with the lead than can be obtained in any other way, and at the same time less than 1/2 of 1% of water soluble arsenic is assured. We guarantee 32 1/2 to 33% arsenic oxide. We also guarantee an "amorphous," or pigment condition. This means greater killing power and better adhesion, suspension and distribution than you can get from any other brand. This material can be kept indefinitely without any loss. You will always have 100% value. Write us for Experiment Station analysis and testimonials which prove our claims.

Send at once for **"Spraying Simplified"**  
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and learn just when and how to protect your trees against all insects and fungous enemies. Its 68 pages are full of valuable information for the farmer and small fruit grower. A postal will do

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Seattle—Portland

Spray for  
Perfect Fruit  
in the Fall



cars going to the auction, showing that he sold at private sale practically the entire crop, and while the private sale prices were low I believe they were fifty per cent better than the auctions.

Referring to cantaloupes, at all times an uncertain proposition, but this season more so than usual. Our melons have always brought better prices than Rocky Fords simply because in previous seasons they were worth more; not so this season, for I am told, and also know from my own experience, that their melons were as good, if not better, than ours, and consequently the results obtained were far from being

## Notice to the Public

The two leading magazines of the Pacific Coast, the Pacific Monthly and the Sunset, have been consolidated under the title of "Sunset—the Pacific Monthly." It is the intention of the publishers to spare no money or effort to make Sunset—the Pacific Monthly a credit to the West and a magazine of national value and importance. To introduce it to new readers, we will make the following special offer: Send 50 cents in stamps, and we will put your name on our subscription list for the next four months, and will send you free a copy of the superbly illustrated Midwinter number, and also the famous Sunset Indian poster, securely packed in a mailing tube. It will make a beautiful ornament for your front room or den. Send your order to Fred Lockley, Northwestern Manager, Sunset—the Pacific Monthly, Portland, Oregon.

## Grand Junction, Colorado, Shows Up Well

From Grand Junction (Colorado) Daily Sentinel

**T**HE following is the annual report of Manager John F. Moore of the Grand Junction Fruit Growers' Association, which was read this morning at the informal session of the growers. The Sentinel is able to furnish the complete report exclusively to its readers. The report follows: As manager of your association I take pleasure in presenting my annual statement for the year 1911. The secretary has read you the financial statement of your association as compiled by Harry Mulnix, certified public accountant, and who was employed to audit the books by your board of directors. As you are aware, the peach crop in the Palisade district was very light. Our carload shipments by freight amounted to forty-five cars. The prices realized, however, I believe were very satisfactory to the growers, and were fully as good, if not better, than we expected to realize, considering the general condition of the country.

Referring to pears, for some time previous to the movement of our Bartlett pears the market was strong, and we fully believed, and also expressed this belief to some of our growers, that we expected to open with a price of from \$2 to \$2.25 per box. We came to this conclusion from the fact that California was receiving very high prices for their Bartlett pears on the Eastern auction for their first shipments out, but in their anxiety to market as large a portion of their crops at high prices as possible, they rushed their pears onto the market before they were sufficiently matured, and by the time we were ready to ship they had completely demoralized the markets of the country, and taking this in connection with the fact that there was an unusually large crop of Bartlett pears in New York, Michigan and other Eastern States, all markets were completely demoralized during the entire shipping season. We were also unfortunate that

California came in later and we earlier than usual, thus forcing us into the markets during their very heavy shipments. The bulk of our pears were handled through Denny & Company by Howard G. Fletcher of Omaha, and I personally know that no man ever worked harder than he did. This is shown by the detailed number of cars handled by him with only twenty-four

## Hemingway's Lead Arsenate

The brand which is used in all of the great apple growing districts of the country—Western New York, Michigan, the Blue Ridge Slopes, the Ozarks and the famous valleys of the great Northwest

### Hemingway's Lead Arsenate

is of the highest standard of manufacture. We claim the following points of superiority:

### Perfect Physical Condition

i.e., fineness of grain and ease in thinning down in water

### Correct Analysis

i.e., full percentage of Arsenic Oxide (not less than 15%) and no more than a trace of Soluble Arsenic

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½-lb. can, .85—Makes 47 gallons, "5/100 of 1 per cent Nicotine"

These prices prevail at ALL agencies in railroad towns throughout the United States. If you cannot thus obtain "Black Leaf 40," send us postoffice money order and we will ship you by express, prepaid.

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satisfactory. These cantaloupes were also handled through Denny & Company by Howard G. Fletcher at Omaha, who distributed them to the different Eastern markets under the exclusive direction of Dr. B. C. Oyler, who was located in the East, and was the paid representative of the Clifton Cantaloupe Growers' Association, and while the results received were poor, nevertheless there is no blame attached to either of these gentlemen, as the deal was properly handled in every detail. It is simply a question of poor quality, together with demoralized market conditions in the large Eastern markets.

Referring to apples, our crop this season, while not over fifty per cent, was nevertheless, I believe, in quality and grade, the best that has ever gone out of this valley, and while the prices were not high, considering general conditions in all of the markets caused by a general financial depression, together with the largest and best crop of apples since 1896 in the barrel districts of the United States and Canada, I believe, taken as a whole, the prices received were very satisfactory, and I think comparisons will show that you received better prices than similar organizations in Colorado have paid their growers. At the beginning of the season we came to the conclusion that there was a very large crop of apples in the country, and for that reason we were free sellers, and out of the entire crop, when the season was over, we had but very few cars in storage, while some other shipping organizations still have a good percentage of their apples stored. Out of our entire shipments we have paid our growers for all but sixty cars, and practically all of these sixty cars have been disposed of, but when our books were closed for the year the returns had not yet been received. It is still my opinion that we are getting out much better than we possibly could have done by placing your apples in storage.

Apples were sold principally through brokers in the different markets, or direct by this office. Our books show that we handled during the season: Apples, 966 cars; peaches, 45 cars; pears, 193 cars; mixed, 45 cars; cantaloupes, 198 cars; honey, 5 cars; making a total of 1,452 cars, for which we

The highest types of apple in the world today are the Hood River Spitzenberg and Yellow Newtown Pippin; the highest type today to Hood River's cosmopolitan people of a life insurance policy is a Policy of the National Life Insurance Company of the United States of America, of Chicago.

These Policies, which hundreds of your neighbors have, make superb Christmas presents, Happy New Year gifts, appropriate wedding presents, choice birthday reminders and unexcelled anniversary tokens.

Write for information to the Agent at Large, Dr. James H. Shults, Hood River, whom most of you know, quote "Better Fruit," and full and satisfactory information will be furnished and hurry orders will receive prompt attention by telegraph and special delivery letters.



paid the growers \$667,380.11. This does not include the sixty cars above referred to. Our supplies and merchandise business combined makes a total of \$386,452.77, making the total business for the year \$1,053,832.88.

Our secretary's report shows that we have made nothing, or at least very little, for our stockholders for the use of their money; this being two years in succession that this has happened. While I know some of you believe that our business has been run along extravagant lines, however, under the most economical plans we cannot possibly show reasonable returns to our stockholders; in fact it is my opinion, on the low commission charges we have always made, it will be impossible to show a reasonable dividend except when we have a large crop and high prices.

For the first time since I became your manager fifteen years ago I have absolutely no recommendations to make. There has been considerable agitation and turmoil among some of our growers, and also among people who were neither members nor growers, and, as the old saying, "A house divided against itself cannot stand," I have fully decided not to allow my name to come before your board of directors for the position of manager for the coming year. I believe we have built up the strongest fruit growers' association of its kind in the world, and I feel that our corps of competent employes have no equal for general efficiency in any similar association, and this has contributed very materially to our past success. Personally I have always tried to give you the best possible service, and I trust my long connection with your association has in some small way contributed to its success. In conclusion I merely wish to say that I entertain the very kindest feelings to our board of directors, and individually to each and every stockholder and grower of fruit in this valley. I bespeak for the association and its new manager, whoever he may be, the same cordial and loyal support accorded me during my long service as manager of your association.

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planted on Sage Brush Lands where plenty of irrigation water is available will experience extra heavy growths if

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The L. C. Smith & Bros. Typewriter Co. have opened direct factory branches in the Northwest, and Mr. H. E. Stemler, former manager for the Pacific Coast dealers for this favorite machine, has been appointed manager for the States of Oregon, Washington and Idaho, direct under the factory, and his thousands of customers will need no introduction to him or his always more than fair dealings with them. The publisher of this magazine has purchased

a great many typewriters in his years of business experience and he could not ask for any fairer nor more honorable treatment than he has received at the hands of Mr. Stemler, representing the L. C. Smith & Bros. typewriter. We are now using four of these machines and, as our business is expanding, we will be compelled to add more in the immediate future. It is needless to say that we will not change to any other make.\*

## SWIFT'S ARSENATE OF LEAD HIGHEST QUALITY Insect Pest Destroyer!

Easy to mix—sure to kill. Death to all leaf-eating insects. Save your trees, fruits and vegetables. Put up in paste or dry form.

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Why buy Arsenate of Lead in leaky wooden kegs when you can buy it in airtight steel containers? Every container is full weight, too. We guarantee not less than 15% arsenic oxide and not more than 50% moisture. On account of the fine physical condition of Bean Spray Arsenate of Lead you can work it up ready for use in the can. It is not necessary to "add water slowly while rubbing to a thin paste," which is necessary with other lead arsenates. When the container is empty use it for an orchard heater.

The Government has used this arsenate exclusively for three years. GET OUR SPECIAL LOW PRICES. Ready for immediate shipment.

## BEAN SPRAY PUMP CO.

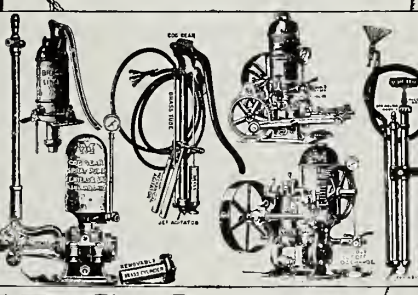
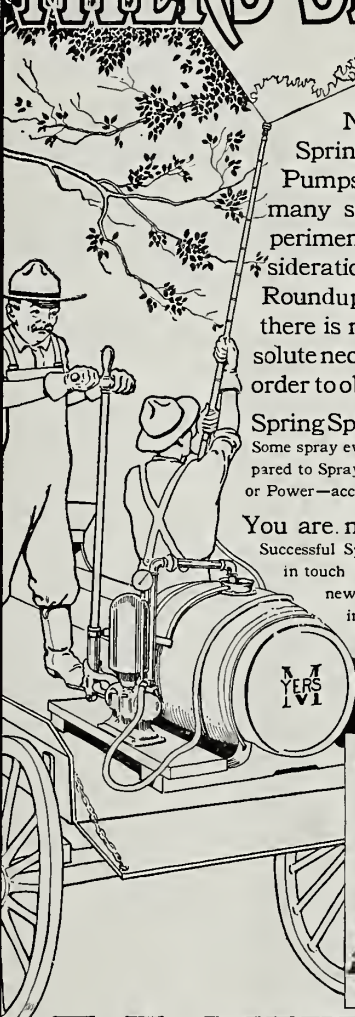
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## Methods of Cultivation for Young Orchards

By E. F. Stephens, Nampa, Idaho

IN forty years' work in orchard, nursery and contract cultivation we have been strongly impressed with the importance of such repeated and frequent cultivation as should maintain a perfectly well aerated condition of the soil and also conserve soil moisture. Aeration of the soil allows the oxygen of the air to oxydize or rust and set free plant food. The conservation of soil moisture insures sufficient water to hold this plant food in solution, enabling the minute rootlets of trees and plants to absorb this plant food and maintain vigorous growth. By a system of careful accounts with many different blocks of nursery stock, we satisfied ourselves that the benefit derived from aeration of soil, and thus setting free abundant supplies of plant food, in the growing of blocks of apple seedlings would justify cultivation as often as once in four days. Conservation of moisture simply does not require cultivation


once in four days. Increased aeration makes larger supplies of plant food available. In the planting and cultivation of seven million trees on contracts, mostly in Western Nebraska and Eastern Colorado, we found that it was entirely practicable, by suitable culture, to conserve a sufficient amount of moisture to carry trees through the driest seasons. On the Lodgepole table lands in 1890, we carried our timber plantations through with a rainfall of only eight inches for the year. In the planting and cultivation of fifty thousand fruit trees in partnership branch orchards we learned that twelve, sixteen and even twenty cultivations would be expended with profit. To illustrate: In the thirty acres of orchard planted in Custer County and cultivated twenty times the first season the trees were planted, we secured a growth on peach trees planted in April of two hundred and eighty-nine feet and two

inches that season. This measures the growth of all of the branches put on the first summer. Cherry, apple and plum trees put on a growth of thirty to fifty feet, showing that under the combined influence of such frequent aeration as should develop plant food and such moisture conservation as should carry the elements of growth in solution, we were able to secure excellent results. Coming now to our orchards at Nampa, where we have planted three hundred and seventy acres, the problem presented lines up in this way: Will frequent tillage in the sandy loam and volcanic ash soils of the Boise basin conserve moisture to the same extent, or nearly the same, as conserved in Western Nebraska and

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### 130 EGG Mankato Incubator \$7.25

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Eastern Colorado? We found that the first season after sagebrush, with only the winter and spring rainfall, we do need to irrigate to saturate the soil to a depth of thirty inches, watering three times during the season, cultivating sixteen times. With the help of our stored water in the sub-soil, the second year our trees thrived and grew vigorously with the two light irrigations. The third season with only one moderate irrigation; all these through furrows. The fourth season we find the accumulated moisture stored in the sub-soil from the snow of winter and the rains of winter and spring we are able to get a very vigorous growth simply by cultivation. Tests with soil augers and spade digging indicate that on a major portion of the land this moisture did not come to us from below. In other words, this condition was not due to sub-irrigation.

Does aeration set free plant food in Idaho? Apparently yes, and our methods of cultivation conserve sufficient amount of moisture to require but little assistance from irrigation. This while the trees are young, that is, up to the age of six to eight years. We have no doubt the time will come when the trees have attained the age of ten, twelve, eighteen and twenty years when our orchards will need copious supplies of water by irrigation. We invite attention to our orchards, indicating that on sagebrush land the same process of frequent cultivation for the benefit of aeration and such methods of conservation as will conserve moisture are equally as valuable in Southern Idaho as in Western Nebraska. The coming season, following the heavy snowfall and rains of winter, soaking the soil probably a depth of three feet, we will continue to cultivate some sixteen times and do not expect to irrigate more than once, and only moderately at that time, in late July. Some mention of the class of implements we have found effective in this line of work. We have used the Acme pulverizer manufactured at Millington, New Jersey, twenty-five years. In connection with this, or shall we say alternating with this, we use the Planet Junior orchard cultivator, with extensions on each side cutting seven feet nine inches. Three good horses or three strong mules will, with this implement, loosen the soil effectively and leave it in excellent condition for the use of the Acme pulverizer, cutting thirteen feet wide. A good team with an implement cutting thirteen feet in width covers the orchard very rapidly. In our experience, the time to kill weeds is before they appear above the ground. Weeds are easily killed just as the seeds are germinating. Frequent tillage prevents crusting of the surface and lessens the amount of power needed. We are also using Baker's power cultivator, and in case of bringing sagebrush land into cultivation we have found the double cut-away pulverizer, manufactured in Millington, New Jersey, useful.



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WITH

## GARSSELLI ARSENATE OF LEAD

It is the Best

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All the above sprayed with Grasselli Arsenate of Lead.

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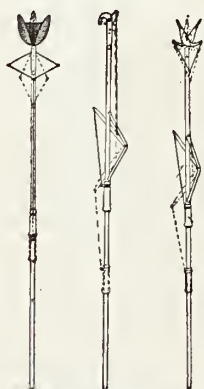
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No makeshifts here—the real thing.  
Easy to operate, light, durable and always ready.  
Made of the best material, blades of the finest quality tool steel, fully guaranteed.  
Don't waste your money on inferior tools—get BASTAIN'S and satisfaction.

Sizes	Pruners	Shears	Pickers
5 to 7 feet.....	\$1.25 each	\$2.25 each	\$1.25 each
8 to 11 feet.....	1.50 "	2.50 "	1.50 "
12 to 16 feet.....	1.75 "	2.75 "	1.75 "

From your dealer or direct from

### American Pruning Implement Co., Inc.

Good Agents Wanted Office 210 Front St. Factory 214 Front St. PORTLAND, OREGON



## WE CLUB

## The Semi-Weekly Journal with "Better Fruit" for \$1.75 per year

The Oregon Journal is one of the big publications of the City of Portland and is well known to all people of the Northwest as being one of the live and interesting newspapers. We believe everybody who takes advantage of this clubbing offer will get more than value received.

## NEW CATALOGUES

Following we give a list of some splendid, instructive and attractive catalogues that have been received at the "Better Fruit" office during the month of January and part of February:

W. F. Allen, Salisbury, Maryland, Strawberry Plants and Other Small Fruits.

Luther Burbank, Santa Rosa, California, "Twentieth Century Fruits."

W. Atlee Burpee & Co., Philadelphia, Pennsylvania, Seeds of All Kinds.

W. Atlee Burpee & Co., Philadelphia, Pennsylvania, Thirty-fifth Anniversary Supplement.

D. V. Burrell, Rocky Ford, Colorado, Vegetable Seed Catalogue.

Doubleday, Page & Co., New York city, Garden and Farm Almanac.

Henry A. Dreer, 714 Chestnut Street, Philadelphia, Pennsylvania, Rose Specialists.

DeGraaff Bros., Ltd., Leiden, Holland, forwarding agents P. C. Kuijper & Co., 10 Broadway, New York city, Bulbs and Plants.

Henry A. Dreer, 714 Chestnut Street, Philadelphia, Dahlias.

Fancher Creek Nurseries, Fresno, California.

Ford Seed Company, Ravenna, Ohio, All Kinds of Seeds.

Henry Field Seed Co., Shenandoah, Iowa.  
Harrison's Nurseries, Berlin, Maryland,  
Fruit Trees, "How to Grow and Market Fruit,"  
Harrison's Nurseries, Berlin, Maryland,  
Specialties, Trees and Plants.

R. M. Kellogg Co., Three Rivers, Michigan,  
Strawberry Plants.

David Knight & Son, Sawyer, Michigan,  
Book on Small Fruits.

Chas. H. Lilly Co., Seattle, Washington, and  
Portland, Oregon, Seeds of All Kinds.

D. McNallie, Sarcoxie, Missouri, Strawberry  
Plants.

G. C. Morse & Co., Market Street, San Francisco,  
California, Seeds of All Kinds.

Portland Seed Co., Portland, Oregon, Seeds  
of All Kinds.

J. B. Pilkington, nurseryman, Portland, Oregon,  
"Fine Nursery Stock."

Routledge Seed & Floral Co., Portland, Oregon,  
seeds, etc.

Richland Nurseries, Rochester, New York,  
Seed Catalogue.

The Shenandoah Nurseries, D. S. Lake, proprietor,  
Shenandoah, Iowa (grade count of stock unsold on March 1, 1912).

Stark Brothers, Louisiana, Missouri, Condensed  
Year Book, 1912.

W. N. Scarff's Fruit and Farm Seeds, New  
Carlisle, Ohio.

W. W. Thomas, Anna, Illinois, Strawberry  
Plants.

C. E. Whitten's Nurseries, Bridgman, Michigan,  
Strawberry Plants.

Winfield Nurseries, Winfield, Kansas.

Miscellaneous books, catalogues, etc.:

Sherwin-Williams Co., Cleveland, Ohio,  
"How You Can Profit by the Increasing Demand for Insecticides."

Merrimac Chemical Co., 33 Broad Street,  
Boston, Massachusetts, sprays, etc., "Raising Apples."

E. I. Du Pont De Nemours Powder Co., Wilmington,  
Delaware, "Tree Planting with Dynamite"; "Farming with Dynamite"; "New Farms for Old—Through Deep Plowing."

A. I. Root Co., Medina, Ohio, Bee Supplies.

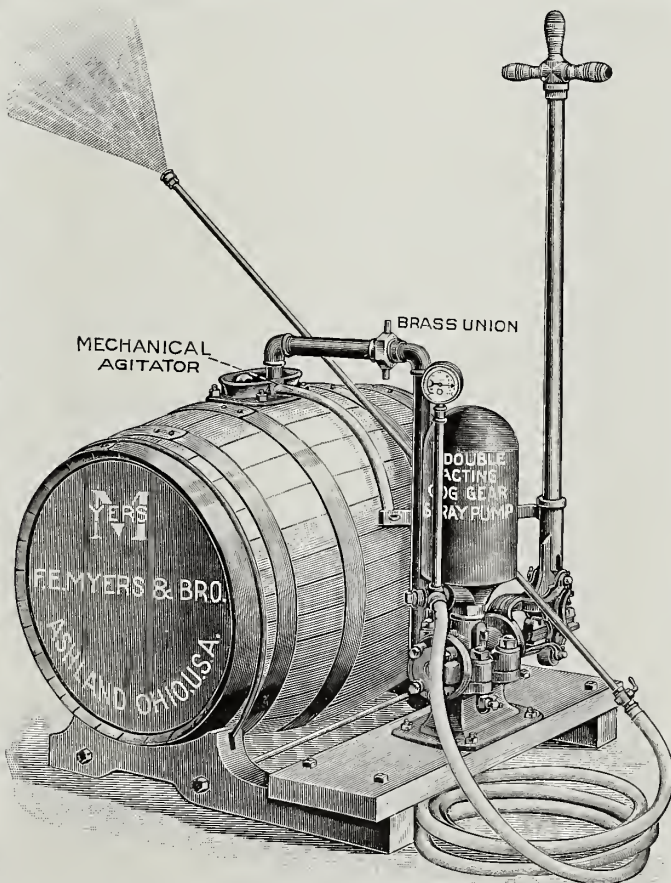
The Magazine Flowers (new), The Suburban Press,  
334 Fourth Avenue, New York city.

A. B. Ansbacher & Co., 253 Broadway, New York city,  
sprays, etc., "The Science of Spraying."

Arnold Specialty Co., Poughkeepsie, New York,  
Box 182, Clothing Specialties.

American Wagon Co., 112 West Adams Street,  
Chicago, Illinois, Machinery, Farm Implements, etc.

Myers' Double Acting Cog Gear Spray Pump. This was introduced to meet the demand for an outfit consisting of a barrel and pump mounted on one base or skids, which could be readily placed in the wagon box and hauled from place to place. The manner of connecting the pump to the barrel and mechanical agitator is readily shown in the illustration. This outfit is furnished with one or two leads of hose and one or two pipe extensions with nozzles. The pump being of such capacity to take care of two leads of hose and four nozzles and without overexerting the operator, because of the cog gear of the handle, which has increased the leverage and permits the operator to keep up the heavy pressure which is necessary for successful spraying. The method of connecting the mechanical agitator to the pump is new and produces the best agitation possible in the barrel, as the paddles pass back and forth in the mixture past the strainer which is on the end of the suction pipe. The suction pipe is provided with the brass union above the top of the barrel, which can be readily loosened, thus permitting the pipe and strainer to be readily removed through the opening of the filler hole when necessary to clean the strainer. This barrel contains fifty gallons. Manufactured by F. E. Myers & Bros., Ashland, Ohio.



WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

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**On Free Trial NO MONEY IN ADVANCE. No bank deposit. Lowest prices. We pay freight and guarantee Sprayers five years.**



**The Hurst Potato and Orchard Sprayer**  
doubles your crop. IT SPRAYS ANYTHING—trees, potatoes, vineyards, truck, etc. High pressure. Easy to operate. Cheap in price, light, strong, and durable. BRASS valves, plunger, strainer, etc. HURST HORSE-POWER SPRAYER for orchards, vineyards, potatoes, etc. "No tree too high, no field too big for this kind of sprayers." All HURST sprayers sold on same liberal No-money-in-advance plan. Write to-day for our FREE Spraying Guide, Catalogue and SPECIAL FREE OFFER to FIRST BUYER in each locality.

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822 North St., Canton, O.

S. L. Allen & Co., Planet Jr. Tools, Philadelphia, Pennsylvania, Farm and Garden Implements.

Bean Spray Pump Co., San Jose, California, Spray Outfits.

The E. C. Brown Co., Rochester, New York, Spray Outfits.

Cushman Power Sprayer, St. Joseph, Missouri.

J. I. Case Threshing Machine Co., Racine, Wisconsin, Threshing Machinery.

The Deming Co., Salem, Ohio.

John Deere Plow, Moline, Illinois, "Better Farm Implements and How to Use Them."

Field Force Pump Co., Elmira, New York, Sprayers.

Friend Manufacturing Co., Gasport, New York, The "Friend" Spraying Outfits.

The Goulds Manufacturing Co., Seneca Falls, New York, "How to Spray—When to Spray—Which Sprayer to Use."

The Hardie Manufacturing Co., North Front Street, Portland, Oregon, Sprayers.

International Harvester Co., Harvester Building, Chicago, Illinois, Almanac and Encyclopedia.

International Harvester Co.'s "For Better Crops."

McWharter Manufacturing Co., Riverton, New Jersey.

F. E. Myers & Bro., Ashland, Ohio, Spray Pumps, etc.

Mitchell, Lewis & Staver Co., Portland, Oregon.

The New Way Motor Co., Lansing, Michigan, Engines, etc.

Seager Engine Works, Lansing, Michigan.

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Our specialty is Roses, grown at Hood River. All of the leading kinds and many of the new ones. From \$3.50 to \$5.00 per dozen.

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FLETCHER & FLETCHER, Hood River, Oregon

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Dunham Pulverizers, Packers, and Rollers are made suitable to every soil formation. Single and double gang pulverizers. Flexible and jointed-frame pulverizers. Combination surface and sub surface packers.

Standard for 52 Years. All steel land rollers. Pipe and T Bar rollers. An average increase of 5% bushels per acre by using the Dunham.

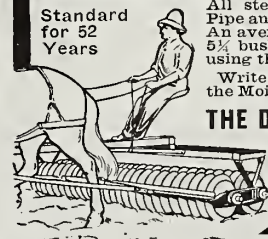
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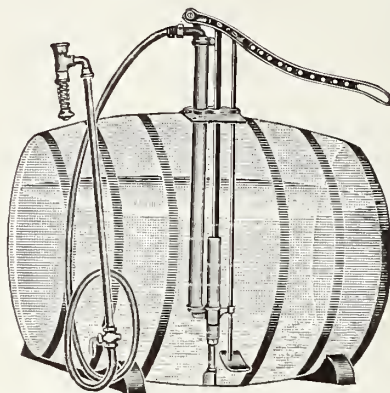




## Our Sprayers Will Satisfy You and Save You Money

Therefore we have no fear to quote prices. We will sell you this sprayer outfit, consisting of pump, hose and couplings, stop-cock extension rod and vermorel nozzle, for..... **\$8.25**

If you are in the market for a sprayer of any kind, you should write us for description and prices. We can supply you with sprayers for household use at 29 cents; white-wash sprayers at \$1.50; air pump sprayers at \$1.70; compressed air sprayers at \$3.35; barrel sprayers at \$5.85 and up, or our big high-pressure power sprayer, driven by gasoline engine, at \$224.50. The spray pump here shown is in use by hundreds of orchard men and farmers. It cannot clog, and is the best sprayer of its kind used. Write us for complete information about this sprayer, "How to Spray, When to Spray, What to Spray," with prices of chemicals in bulk. We also sell barrel carts and oil heaters at wholesale prices. Get our list free, and save money. All sprayers shipped direct from Kansas City. Satisfaction or money back.



**Jones, Post & Co., 601 Liberty Street, Kansas City, Mo.**

## The Storage in Transit Question

Address of H. C. Nutt, at Washington State Horticultural Meeting, Clarkston

THE subject assigned, "Storage in Transit," particularly on apples, is one which has to deal somewhat with the marketing of the product and the benefits that may be derived from an arrangement of this character. Under tariffs now covering the transportation of apples to the territory east of St. Paul and Minneapolis the provision is granted that apples may be stored in transit at Duluth, St. Paul or Minneapolis transfer, and at those points wait for completion of service to a more distant market. The storage is, however, of public character, not handled by the railroads and not controlled by the people who raise the fruit, and not of a certain or permanent character. Some question may be raised as to whether the interests of the fruit-grower are best served under the present arrangement. I think not. It seems to me that the expense of this storage at points where the property used is expensive both for its construction and for the land occupied, the more general use of storage in the territory and the higher price for the space. Another question: Does it serve the best interest of the grower to place his crop, while still in his ownership or control, in storage at a point so remote from his own location or from the point of production? Is the grower or the association not at some disadvantage in endeavoring to handle his product at such a great distance? Can he be closely enough in touch with the markets at the point of storage or east of there to take the best advantage as to the time to sell, so as to secure the greatest profit? I have heard individuals make some statements as to experience in storage in Western territory, complaining loudly about the cost of the storage, the charges that were made for various purposes, and it seemed as though it took a very large

value off the crop; that the various items which were charged made a very much larger tax against the apples than conditions justified. The question may naturally arise: Why would it not be better to store the apples nearer home, and would not the grower, under these circumstances, be able to make an

arrangement which would very much lessen the cost of storage, insurance and various other items, if the storage was of a mutual character, created and maintained by the growers themselves as an association? Could not they profit to the same extent that the grain growers in this territory now claim to be profiting by storage of their own grain? There are other reasons, and I think they are very strong ones, why the apples should be stored in the territory of their production rather than that the growers should be dependent upon the means of transportation for placing the apples in the Eastern territory immediately upon the ripening of the crop. The future growth of the business, I think, is anticipated and realized very generally by the people who are now engaged in it. I have heard a number of statements that within a very few years the apple product of the Pacific Northwest, including Montana, would probably reach forty thousand cars per annum. Let us put it at half that and give some consideration to what it means in its transportation.

I think, generally speaking, that the present conditions would contemplate

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PORTLAND, OREGON

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Devoe Arsenate of Lead, Devoe & Raynolds Paris Green, Devoe Lime and Sulphur Solution are all sprays to count on. They will do the business—if you will do your share.

Back of Devoe sprays is the name "Devoe"; a guarantee of quality. If your dealer does not carry Devoe sprays, and says he has something "just as good," better write us.

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*Largest makers of good paints for all purposes*



## Labor-Saving Methods in Your "Fruit Factory" and in Our Pump Factory

Every up-to-date business man nowadays—fruit grower and manufacturer alike—is studying how to make every dollar he spends show a better return.

Your business, as a grower, is to have spraying outfits that will do your work thoroughly and easily, without breakdown or waste. Our business is to make such outfits—and in

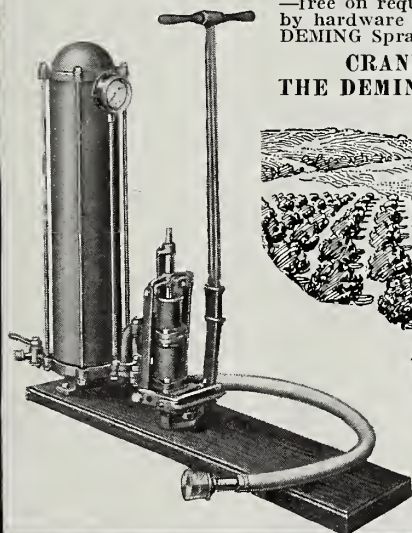
## Deming Spray Pumps

we offer you the product of a factory where common-sense labor-saving methods are put to work to make you a better pump than you can get anywhere else. We have been making Deming Spray Pumps for nearly twenty years, and have made a big success with them because we have lived close to fruit growers and their needs—found what they require, and supplied really practical machines.

### Write for Our Fine Catalogue NOW

We make nearly two dozen sprayers for all uses—gasoline engine outfits for large orchards, big hand-power and traction machines for medium sized ones, bucket and knapsack outfits for gardens. Complete particulars in our new Catalogue—free on request. Deming Spray Pumps are handled through our Agencies in principal cities, and by hardware and implement stores almost everywhere. Consult your dealer; insist upon getting DEMING Sprayers. If he refuses, we will supply you direct at factory prices.

CRANE CO., Pacific Coast Agents, Portland, Seattle, Spokane, San Francisco  
THE DEMING CO., Manufacturers of Pumps for All Uses, 335 Success Bldg., Salem, Ohio



## YAKIMA COUNTY HORTICULTURAL UNION

North Yakima, Washington

C. R. Paddock, Manager

Apples, Pears, Peaches, Cherries  
Plums, Prunes, Apricots, Grapes  
and Cantaloupes

Mixed carloads start about  
July 20. Straight carloads in  
season. Our fruit is the very  
best grade; pack guaranteed

We use Revised Economy Code

the movement of the apple crop from this territory to Eastern markets within a period approximating sixty days. It would certainly mean that, if no other means than we have at present are provided for caring for the apples where they grow. Twenty thousand cars of apples transported or offered for shipment in sixty days would be approximately three hundred and fifty cars per day. Now, assuming that one hundred days was a reasonable period for their transportation, it would still call for two hundred cars per day to be moved east over a haul of nearly two thousand miles by most any of the transcontinental lines to reach storage territory where the apples could be held even before shipping to their final point of destination. Take into consideration that the movement generally takes place after the weather in Dakota, Minnesota and other Northern States has gotten to a point where we may reasonably expect zero temperature, it is necessary that refrigerator cars should be furnished for the movement of this fruit. At two hundred cars a day, it doesn't take long to estimate what demands would be put upon the railway companies to furnish the necessary equipment to take care of such a movement. On the other hand, we must meet—the grower must meet—the proposition of being forced, practically, to make some disposition of his crop immediately upon its being ready

for gathering. If we had twenty thousand cars of apples, say at six hundred boxes to the car, and the market value was a dollar a box, it would take twelve million dollars to buy this product if it was to be shipped within

## SPRAYING SUITS

Don't undertake to do your spraying till you have secured one of our suits. AN ABSOLUTE NECESSITY for safety, comfort and convenience when spraying. A one-piece suit, with our special sleeve arrangement that prevents the liquid from reaching the arms. Made to your measure from a heavy grade of khaki. Also OVERSUITS for picking, packing and for use of farmers, mechanics, teamsters, automobile owners, and hunting, fishing and camping. Send for pamphlet and prices.

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Climate and Scenic  
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A RESIDENCE AND RESORT TOWN  
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For information concerning Fruit, Poultry and Swine Raising, Dairying, Ranching, Mining, etc., address

ASHLAND COMMERCIAL CLUB  
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## SILVER SUDS

The best Cleanser and Polish for Gold, Silver, Plated Ware, Tin, Aluminum, or any surface where a brilliant luster is desired.

Perfectly harmless  
Saves times, labor and money

It is a household necessity and a comfort to all who use it. A single package makes a full pint.

Price 35 cents a package

Address ST. MARKS GUILD  
Box 131 Hood River, Oregon

Agents for Oregon and Washington

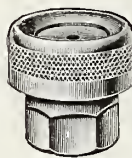


ninety days to the Eastern markets. The freight and shipping charges to the general destination might be figured at perhaps fifty cents a box, probably not less than that, which means an additional investment of six million dollars, making eighteen million dollars of cash, practically, to handle this crop. Now, is it possible to enlist the investment of such an amount of money by Eastern people who have got to take hold of the crop? Is it possible to enlist the investment of such an amount of money in a crop to move within that limited time and to be carried to these investors in the East, subject to the varying conditions of the market and the possibilities of loss of profit? I think it is rather beyond the expectations of any of us that this could be depended upon. On the other hand, assuming that storage could be provided in this territory for the apples and that instead of being shipped via the long hauls to the East upon gathering they should be shipped to central points where they could be stored in frost-proof storage, also where they could be kept at a cool temperature necessary to properly preserve the fruit held there awaiting the demands of

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### Offer

Merely send us your bank reference and state how many acres of orchard you own and we will send you at once two of these nozzles postpaid for 10 days' free trial. When you have tried them and are satisfied that they are all we claim, send us \$1.00 for the two. If for any reason you don't want them, send us a postal and we will send postage for their return. Easy! Isn't it?



### Crown Mass-O-Spray Nozzles

look just like many other kinds, don't they? But, say! There's a great secret inside. They throw a driving spray more powerful than the Bordeaux and a full, solid cone of spray instead of a hollow one, as the others do. And then, in one minute you can change to a fine, misty fog, like that of a perfect Vermorel. You see it is a real, UNIVERSAL NOZZLE—TWO NOZZLES IN ONE! And think of it! it sells for from 1/2 to 3/4 the price of other nozzles.

Look at the FREE TRIAL OFFER WE MAKE! You can't lose.

If you aren't spraying already, you soon will be, and when that cussed relief valve starts to act up and won't shut tight and you can't hold your pressure, just remember that the CROWN RELIEF VALVE is designed on entirely new principles. It can't be clogged and there is no possibility of the grit cutting the seat away and making it leak. It always shuts tight. Then when the old spray pump that you thought would last this season breaks down, just remember the CROWN POWER SPRAY PUMP for \$45.00. See our ads in the last three numbers of BETTER FRUIT. Your dealer can get you our goods. If he will not do so, wire us "collect" and we will ship at once. No delays.

## CROWN SPECIALTY CO.

All mail to Box 297, Chicago.

All telegrams to 1555 Fulton Street, Chicago.

the market. Instead of the grower being forced to sell them on the tree or sell them as gathered at whatever he can get for them let him be in position to peddle them out during the winter, or during the time that they are fit for consumption, and place them on the market as the market demands. Compare the way the apple crop is handled today with the way the wheat or hay crop of the country is taken care of. No one has ever presumed or considered it possible that the whole of the wheat crop of this country (the Pacific Northwest) could be sold at one time at a favorable price, even though we appreciate that wheat is cash and that if a man has a thousand bushels of wheat he ought to be able to dispose of it today or tomorrow at the going price. It is impossible, however, to dispose of it all at

once, and taking the market conditions into consideration, anyone engaged in that line well knows that you cannot at any time put all the grain there is in the country on the market at any one time. There would be no takers for it. There is no one with sufficient money for the proposition, and there would be the question of the movement of it. Even with the short haul from the Northwest to the Pacific Coast the railways use all manner of cars—flat cars, box cars, gondolas—



Millions of Dollars Are Lost Annually by Fruit Growers, Because They Do Not Spray Persistently With Properly Made Sprays

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Are the Standard of the World

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Destroys Every Known Insect Pest and Fungous Disease of Fruit Trees; Save the Trees and Insure Larger Crops of First Quality Fruit

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For San Jose Scale particularly, and the only spray that destroys scale and does not injure trees. Ready for use, and more economical than home-made.

### "LION BRAND" BORDEAUX MIXTURE

prevents Blight, Mildew, Rot, etc., from destroying Potatoes, Beans, Peas and Melons; keeps spots and specks off Apples, Peaches and other fruit, and makes crops surer and far larger. One gallon to 49 of Water.

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contains absolutely not a particle of filler or adulterant of any sort. Accepted the world over as the standard.

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The stickiest arsenate made. Preferable for Codling Moth, Curculio, Elm Leaf Beetle and Cbe-wing Insects of all sorts, on trees, shrubs, vines, bushes and vegetables, where it is desirable that the poison remain longer on the foliage than it is possible with other insecticides. Does not burn the most delicate foliage.

### We Also Make Many Other Specialties

Something to destroy every injurious insect, and protect trees and plants from all fungous disease.

We are the largest and oldest manufacturers of Insecticides and Fungicides in the World—in this business exclusively 23 years. We publish a

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Blanchard's Products are sold by dealers and agents everywhere, or direct if your dealer cannot supply you.

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594 Hudson Terminal

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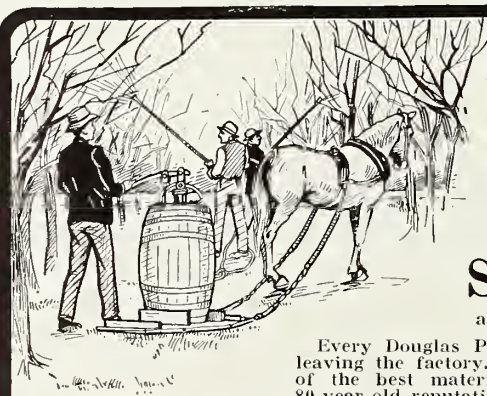
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## SIMPLEX SPRAYERS.

A New Patented Sprayer different from others. Only one keeping up a high pressure, liquid always agitated. No stopping to pump, done while you spray. Recommended by experiment stations. Once tried will use no other. Easiest to operate, durable, saves time, labor and money; non-clog. For trees, potatoes, gardens, white washing, painting, etc. Lowest prices. Send for Spraying Guide. **SIMPLEX MFG. Co., Box 905 St. Peter, Minn.**



## A Pump for Every Purpose

Dependable, Durable, Efficient,  
Easy to Operate.

These are features which distinguish Douglas Pumps. Used with perfect satisfaction for over 60 years on the Pacific Coast.

## Douglas Spray Pumps

assure you of perfect service.

Every Douglas Pump is tested thoroughly before leaving the factory. Designed by experts and built of the best materials by skilled workmen. Our 80-year-old reputation is your greatest safeguard. Our "Arlington" barrel sprayer is a decided improvement over the common type. It easily carries four disc-nozzles at high pressure and throws a fine cloudy mist. The pump is submerged and easily accessible from the top. Lasts practically a lifetime.

Our 1912 Catalog contains valuable information on the right spraying outfit. We have a copy for you. Write for it.

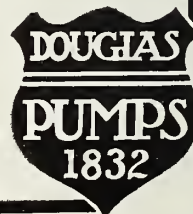
### W. & B. DOUGLAS

16 Broad Street, Middletown, Conn.

Manufacturers of cistern pumps, deep well pumps, power pumps, and pumps for fire-fighting and forestry purposes.

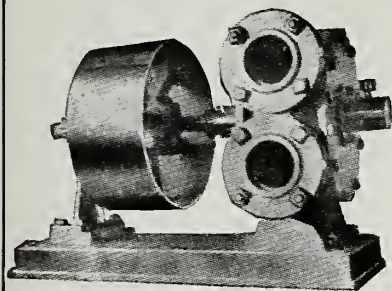
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"The Pump You Have  
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# The Ideal System of Irrigation

Saves power and money; utilizes the power and converts it into results; high heads without staging; surface use, or wells, pits, mines or reservoirs; mechanical perfection; simplicity; easily installed; free from usual wear; adjustable to take up wear; strong, compact, positive, faithful and efficient machine. Costs more because worth more, because it saves more than it costs over other machines. Many sizes: 10 gallons per minute to 1,000 gallons per minute, \$30 to \$625. Address

**IDEAL PUMP WORKS, Inc.**

1912 Westlake Avenue

Seattle, Washington

practically everything in the railroad service is called into requisition for the movement of the grain crop to the Coast, and then the movement extends over a period of four to five months. All of you who have been engaged in that line of business know the chronic conditions of ear shortage when the crop is good or when the market demands or favors a sale.

Compare the conditions in regard to the storage of grain in the Pacific Northwest with the facilities for storage of apples. I think, without doubt, there is in this immediate district of Eastern Washington, and Northern Idaho, and Northeastern Oregon storage capacity provided for not less than 35,000,000 bushels of grain. It takes about forty acres to produce one earload of wheat, assuming the ear to be

a thousand bushels. I think twenty-five bushels to the acre would be considered a very good wheat crop. Compare that with acreage of apples and with the prospects for the future as to the product of the apple acreage, which is now growing and which is likely to be increased. That twenty thousand cars of apples to be handled from this country ought to have more cars employed in service than are required to haul the entire grain crop of the Northern Pacific in the Pacific Northwest States. The crying necessity at this time, it seems to me, is one which calls for preparation in the way of storage in this territory. It is not going to be possible for all the railroads that are now in this country to handle the apple crop three years from this date on a satisfactory basis to the grower if it is to be put in storage at St. Paul, Omaha, Chicago or any other Eastern point. If, however, sufficient storage could be provided in this territory, and I believe it would be a profitable investment for anybody who went into it, it will, as I have stated, enable the grower to put his crop on the market, not in one lump and not sell it to individuals who come out and take it off the trees at their own price, as will be the ease in the future if there is no other arrangement made—but conserve it here and feed it to the market as the market will take it, and at a much better price than would be possible otherwise.

I am perfectly satisfied that the railroads will all join in any arrangement

which provides low rates to the storage point or transit rates through a Western storage point at a nominal price. The present rates to the East where storage in transit is called for is ten cents per hundred above the rate to the final destination. There is

## Do You Know Aunt Harriet?

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Farm Journal holds quite as much of interest for women as for men—whether they live in the city or the country. It's a great home paper—full of valuable hints that make for economy of time and money in the conduct of household affairs.

Thoroughly practical, but not a bit dry. Clean to the core, but never preachy. 75,000 homes are sweeter and better for its monthly visits.

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Subirrigated, Diversified Fruit  
Vegetable and General Farm Land

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Tracts Range 60 to 6,000 Acres

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for Northwest Growers

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CLACKAMAS, OREGON

no question but what the roads in the Pacific Northwest would be willing to provide for storage in transit at Lewiston, Spokane, North Yakima or any place where such storage was provided, and at an additional cost, which would mean nothing more than a switching charge for the stock. That is very much the same practice as governs in regard to milling in transit on wheat. Ordinarily the rate for that is two and one-half cents above the through rate on the wheat from the point of original shipment to the destination of the flour. I see no reason why the storage in transit rate for apples stored in the territory where the railroads then would have control as to the rate should not be on something similar as to the basis.

#### Editor Better Fruit:

A news item which may be of interest to you is that Dr. S. M. Dick, who has been pastor of Wesley M. E. Church of Minneapolis, a church with a membership of over one thousand, has resigned the pastorate and has been elected president and manager of The A. C. Bohrnstedt Orchard Company, which has its entire holdings at Creswell, in Lane County, Oregon. The A. C. Bohrnstedt Company retains its financial interest in that company and the writer still remains as a director, and will have considerable to do with the management of the Western end of the business, but the change is made so that The A. C. Bohrnstedt Company can give its undivided attention to our Salem business. We shall undoubtedly do a great deal of development work there in the future. Our main offices will be at Salem after about March 1. We are also disposing of our Southern Alberta, Canada, interests, so as to devote our entire time to Willamette Valley, Oregon, lands. Yours very truly, A. C. Bohrnstedt, Minneapolis, Minnesota.

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OVER 99% PURE

Fruit growers have lost thousands of dollars because the Arsenate of Lead used killed the pest after the pest had marked the fruit.

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Northwest Fruit Growers' Unions and Associations

We publish free in this column the name of any fruitgrowers' organization. Secretaries are requested to furnish particulars for publication.

Oregon

Eugene Fruit Growers' Association, Eugene; Ashland Fruit and Produce Association, Ashland; Hood River Apple Growers' Union, Hood River; Milton Fruit Growers' Union, Milton; Douglas County Fruit Growers' Association, Roseburg; Willamette Valley Prune Association, Salem; Mosier Fruit Growers' Association, Mosier; The Dalles Fruit Growers' Union, The Dalles; Salem Fruit Union, Salem; Albany Fruit Growers' Union, Albany; Coos Bay Fruit Growers' Association, Marshfield; Estacada Fruit Growers' Association, Estacada; Umpqua Valley Fruit Growers' Association, Roseburg; Hyland Fruit Growers of Yamhill County, Sheridan; Newburg Apple Growers' Association, Newburg; Dufur Valley Fruit Growers' Union, Dufur; McMinnville Fruit Growers' Association, McMinnville; Coquille Valley Fruit Growers' Union, Myrtle Point; Stanfield Fruit Growers' Association, Stanfield; Oregon City Fruit and Produce Association, Oregon City; Lincoln County Fruit Growers' Union, Toledo; Rogue River Fruit and Produce Association, Medford; Mount Hood Fruit Growers' Association, Sandy; Northeast Gaston Farmers' Association, Forest Grove; Dallas Fruit Growers' Association, Dallas; Northwest Fruit Exchange, Portland; Springbrook Fruit Growers' Union, Springbrook; Cove Fruit Growers' Association, Cove; Santiam Fruit Growers' Association, Lebanon; Washington County Fruit Growers' Association, Hillsboro; Benton County Fruit Growers' Association, Corvallis; Sutherlin Fruit Growers' Association, Sutherlin; Brownsville Fruit and Produce Association, Brownsville.

Washington

Kennewick Fruit Growers' Association, Kennewick; Wenatchee Fruit Growers' Union, Wenatchee; Puyallup and Sumner Fruit Growers' Association, Puyallup; Vashon Island Fruit Growers' Association, Vashon; Mt. Vernon Fruit Growers' Association, Mt. Vernon; White Salmon Fruit Growers' Union, White Salmon; Thurston County Fruit Growers' Union, Tumwater; Bay Island Fruit Growers' Association, Tacoma; Yakima Valley Fruit and Produce Growers' Association, Granger; Buckley Fruit Growers' Association, Buckley; Lewis River Fruit Growers' Union, Woodland; Yakima County Horticultural Union, North Yakima; White River Valley Fruit and Berry Growers' Association, Kent; Lake Chelan Fruit Growers' Association, Chelan; Zillah Fruit Growers' Association, Toppenish; Kiona Fruit Growers' Union, Kiona; Mason County Fruit Growers' Association, Shelton; Clarksston Fruit Growers' Association, Clarkston; Walla Walla Fruit and Vegetable Union, Walla Walla; The Ridgefield Fruit Growers' Association, Ridgefield; Felida Prune Growers' Association, Vancouver; Grandview Fruit Growers' Association, Grandview; Yakima Valley Fruit Growers' Association, North Yakima; Southwest Washington Fruit Growers' Association, Chehalis; The Touchet Valley Fruit and Produce Union, Dayton; Lewis County Fruit Growers' Association, Centralia; The Green Bluffs Fruit Growers' Association, Mead; Garfield Fruit Growers' Union, Garfield; Goldendale Fruit and Produce Association, Goldendale; Spokane Inland Fruit Growers' Association, Kelso; Elma Fruit and Produce Association, Elma; Granger Fruit Growers' Association, Granger; Cashmere Fruit Growers' Union, Cashmere; Stevens County Fruit Growers' Union, Myers Falls; Dryden Fruit Growers' Union, Dryden; Apple Growers' Union of White Salmon, Underwood.

Idaho

Southern Idaho Fruit Shippers' Association, Boise; New Plymouth Fruit Growers' Association, New Plymouth; Payette Valley Apple Growers' Union, Payette; Parma-Roswell Fruit Growers' Association, Parma; Weiser Fruit and Produce Growers' Association, Weiser; Council Valley Fruit Growers' Association, Council; Nampa Fruit Growers' Association, Nampa; Lewiston Orchard Producers' Association, Lewiston; Boise Valley Fruit Growers' Association, Boise; Caldwell Fruit Growers' Association, Caldwell; Emmett Fruit Growers' Association, Emmett; Twin Falls Fruit Growers' Association, Twin Falls; Weiser River Fruit Growers' Association, Weiser; Fruit Growers' Association, Moscow.

Colorado

San Juan Fruit and Produce Growers' Association, Durango; Fremont County Fruit Growers' Association, Canon City; Rocky Ford Melon Growers' Association, Rocky Ford; Plateau and Debeque Fruit, Honey and Produce Association, Debeque; The Producers' Association, Debeque; Surface Creek Fruit Growers' Association, Austin; Longmont Produce Exchange, Longmont; Manzanola

Fruit Association, Manzanola; Delta County Fruit Growers' Association, Delta; Boulder County Fruit Growers' Association, Boulder; Fort Collins Beet Growers' Association, Fort Collins; La Junta Melon and Produce Company, La Junta; Rifle Fruit and Produce Association, Rifle; North Fork Fruit Growers' Association, Paonia; Fruita Fruit and Produce Association, Fruita; Grand Junction Fruit Growers' Association, Clifton, Palisade, Grand Junction; Palisade Fruit Growers' Association, Palisade; Peach Growers' Association, Palisade; Colorado Fruit and Commercial Company, Grand Junction; Montrose Fruit and Produce Association, Montrose; Hotchkiss Fruit Growers' Association, Hotchkiss; Paonia Fruit Exchange, Paonia; Colorado Fruit Growers' Association, Delta; Crawford Fruit Growers' Association, Crawford; Amity Cantaloupe Growers' Association, Amity; Pent County Melon Growers' Association, Las Animas; Capitol Hill Melon Growers' Association, Rocky Ford; Denver Fruit and Vegetable Association, Denver; Fair Mount Melon Growers' Association, Swink; Fowler Melon Growers' Association, Fowler; Granada Melon Growers' Association, Granada; Grand Valley Fruit and Produce Association, Grand Junction; Independent Fruit Growers' Association, Grand Junction; Kouns Party Cantaloupe Growers' Association, Rocky Ford; Lamar Melon Growers' Association, Lamar; Loveland Fruit Growers' Association, Loveland; Manzanola Orchard Association, Manzanola; Neardale Melon Growers' Association, Swink; Roaring Fork Potato Growers' Association, Carbonale; Woods Melon Growers' Association, Las Animas.

Montana

Bitter Root Fruit Growers' Association, Hamilton; Missoula Fruit and Produce Association, Missoula.

Utah

Farmers and Fruit Growers' Forwarding Association, Centerville; Ogden Fruit Growers' Association, Ogden; Brigham City Fruit Growers' Association, Brigham City; Utah County Fruit and Produce Association, Provo; Willard Fruit Growers' Association, Willard; Excelsior Fruit and Produce Association, Clearfield (Post-office Layton R. F. D.); Centerville Fruit Growers' Association, Centerville; Bear River Valley Fruit Growers' Association, Bear River City; Springville Fruit Growers' Association, Springville; Cache Valley Fruit Growers' Association, Wellspring; Green River Fruit Growers' Association, Green River; Farmers and Fruit Growers' Forwarding Association, Centerville.

New Mexico

San Juan Fruit and Produce Association, Farmington.

California

The Supply Company of the California Fruit Growers' Association, Los Angeles; California Fruit Exchange, Sacramento; Loomis Fruit Growers' Association, Loomis; Newcastle Fruit Growers' Association, Newcastle; Penryn Fruit Growers' Association, Penryn; Vacaville Fruit Growers' Association, Vacaville; Turlock Fruit Growers' Association, Turlock; Winters Fruit Growers' Association, Winters; Lincoln Fruit Growers' Association, Lincoln; Lodi Fruit Growers' Union, Lodi; Fresno Fruit Growers' Co., Fresno; Stanislaus Farmers' Union, Modesto; California Farmers' Union, Fresno; Sebastopol Berry Growers' Union, Sebastopol; Sebastopol Apple Growers' Union, Sebastopol.

British Columbia

British Columbia Fruit Growers' Association, Victoria; Victoria Fruit Growers' Exchange, Victoria; Hammond Fruit Association, Ltd., Hammond; Hatzie Fruit Growers' Association, Hatzie; Western Fruit Growers' Association, Mission; Mission Fruit Growers' Association, Mission; Salmon Arm Farmers' Exchange, Salmon Arm; Armstrong Fruit Growers' Association, Armstrong; Okanagan Fruit Union, Limited, Vernon; Kelowna Farmers' Exchange, Limited, Kelowna; Summerland Fruit Growers' Association, Summerland; Kootenay Fruit Growers' Union, Limited, Nelson; Grand Forks Fruit Growers' Association, Grand Forks; Boswell-Kootenay Lake Union, Boswell; Queens Bay Fruit Growers' Association, Queens Bay; Kaslo Horticultural Association, Kaslo; Creston Fruit and Produce Exchange, Creston.

Books we have read, own and recommend, which can be ordered of your local stationer, or direct. The initials after the name represent the publishers, whose addresses are found at the end of the list. These books can be ordered of the J. K. Gill Company, Portland, Oregon.

Fruits and Fruit Trees of America—Downing .....W \$4.50  
California Fruits—Wickson.....P 2.50  
Success with Small Fruits—Roe.....DM .75  
American Fruit Culturist—Thomas...WW 2.50

Strawberry Culturist—Fuller.....J .50  
The Principles of Fruit Growing—Bailey .....M 1.25  
Bush Fruits—Card .....M 1.50  
Horticulturists' Rule Book—Bailey.....M .75  
The Nursery Book—Bailey.....M 1.00  
Pruning Book—Bailey.....M 1.50  
Cyclopedia of Horticulture—Bailey...D 30.00  
Nut Culturist—Fuller .....J .75  
Insects Injurious to Fruits—Saunders...L 2.00  
Fungi and Fungicides—Weed.....J 1.00  
Insects and Insecticides—Weed.....J 1.50  
Spraying Crops—Weed.....J .50  
Spraying of Plants—Lodeman.....M 1.00  
Talks on Manure—Harris.....J 1.50  
Farming with Green Manures—Harlan.F 1.00  
Fertilizers—Voorhees.....M 1.00  
Irrigation Farming—Wilcox.....J 2.00  
Irrigation for Farm, Garden and Orchard—Stewart .....J 1.50  
Irrigation and Drainage—King.....M 1.50  
Gardening for Profit—Henderson.....J 1.50  
New Onion Culture—Greiner.....J .50  
New Rhubarb Culture—Morse.....J .50  
Asparagus—Hexamer.....J .50  
Vegetable Gardening—Green .....WP 1.25  
A B C of Potato Culture—Terry.....R .45  
Tomato Culture—Root .....R .35  
Melons—Burpee .....B .20  
The Vegetable Garden—Velnorin.....D 4.50  
The Forcing Book—Bailey.....M 1.00  
Garden Making—Bailey.....M 1.00  
Practical Garden Book—Nunn & Bauey.M 1.00  
Hedges and Windbreaks—Powell.....J .50  
The Soil—King.....M .75  
Fertility of the Land—Roberts.....M 1.25  
The Farmstead—Roberts.....M ...  
Rural Wealth and Welfare—Fairchild.M ...  
Farm Poultry—Watson.....M 1.25  
How the Farm Pays—Crosier & H....H 2.00  
The First Book of Farming—Goodrich... 1.00  
Cyclopedia of Agriculture.....J 4.50  
The Principles of Agriculture—Bailey.M 1.25  
Roses and How to Grow Them—Sibson & Holman.....G .50

ABBREVIATIONS

Pacific Press Pub. Co., San Francisco, Cal..P  
Orange Judd Co., New York.....J  
Webb Publishing Co., St. Paul, Minn.....WP  
A. I. Root Co., Medina, Ohio.....R  
W. Atlee Burpee, Philadelphia.....B  
J. H. Gregory, Marblehead, Mass.....G  
Doubleday, Page & Co., New York.....D  
A. T. Ferris, Shea.....F  
John Wiley & Sons, New York.....W  
W. W. Wood & Co. ....WW  
J. K. Gill & Co., Portland.....G  
J. B. Lippincott & Co., Philadelphia.....L  
MacMillan Co., New York.....M  
P. Henderson & Co., New York.....H

**Butte Potato & Produce Co.**  
BUTTE, MONTANA  
Jobbers of all Farm and Orchard Products  
We have a large outlet for fruits and vegetables. We want to hear from shippers.  
A. J. KNIEVEL  
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**SLOCOM'S BOOK STORE**  
Office Supplies  
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Ledgers, Journals, Time Books  
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## Plans Under Way for Better Drainage of Farms

FARM owners throughout the country will be interested in the plans now under way to promote better tillage methods and to encourage an increase of under-drainage. The National Drainage Congress in New Orleans in April, and the drainage convention in connection with the drain tile exhibit at the Coliseum in Chicago, March 7 to 12; the recent meeting of the Illinois drainage interests at Springfield and various other meetings are all a part of this general plan. Drain tile manufacturers are naturally interested in the increased use of tile, and their zeal in behalf of their own business interests is a distinct aid to the drainage cause. The drain tile exhibit at the Coliseum in March, therefore, will be an event of special interest. During the same week a farm draining meeting of national importance will be held at the Congress Hotel and a national drain tile association formed. This meeting will be addressed by C. G. Elliott, chief of drainage investigations of the United States Department of Agriculture; John W. Anderson, Woodland, Illinois; Professor A. Marston, Iowa State College; G. W. Thompson, Evanston, Illinois, and other prominent speakers.

One of the features of the drain tile exhibit will be the joint display of Iowa tile manufacturers in the form of an artistic structure erected from the products of their plants. Other exhibits will be made by many drain tile inter-

ests, and this section of the show will be one of its most important features. The United States Department of Agriculture will have a display, and it is probable that among the features will be a complete model tile-drained farm showing proper under-drainage methods. Among other interesting features at this industrial exposition will be a full sized clay block silo, which has been found so successful and economical in Iowa. These silos have shown remarkable stability and ability to protect the silage from frost during the coldest weather. This type of silo was perfected at the Iowa State College at Ames. Many drainage contractors, drain tile manufacturers and farm owners throughout the country are planning to attend this exposition and drainage convention.

Mr. E. F. Harris, a farmer of Harris, Missouri, in discussing the present activity in behalf of increased tile drainage, said: "If rainfall were regulated to meet the needs of growing crops, coming when needed and withheld when not needed, tile drainage would not be vitally necessary, though in such a condition there would still be great value in tile drainage in the preparation of the ground to facilitate cultivation, promote fertility and dispose of injurious ground or soil acids. However, rain comes without measure of necessity, doing damage in its excess and falling short of needs in its small

## Kill the Scale

**That Kills the Fruit**

With the most concentrated solution of them all.

# LILLY'S

## LIME AND SULPHUR

Pure, Strong and Free From Sediment

Every barrel or can TESTED and the strength stamped on the label so that the user knows just what to use.



Send for copy of Lilly's Spray Book and Price List, mailed free. It is a valuable book to all interested in fruit raising.

The Chas. H. Lilly Co., Seattle

## Burpee's Seeds that Grow

140 VARIETIES ANY QUANTITY

Plenty of stock in our 40,000 pounds  
Growing Plants as season requires

All makes high grade

Pruning Tools  
Garden Tools  
Hose and Spray Nozzles  
International Stock and Poultry Food  
International Remedies  
Incubators and Brooders  
Everything for Building  
Everything for Furnishing

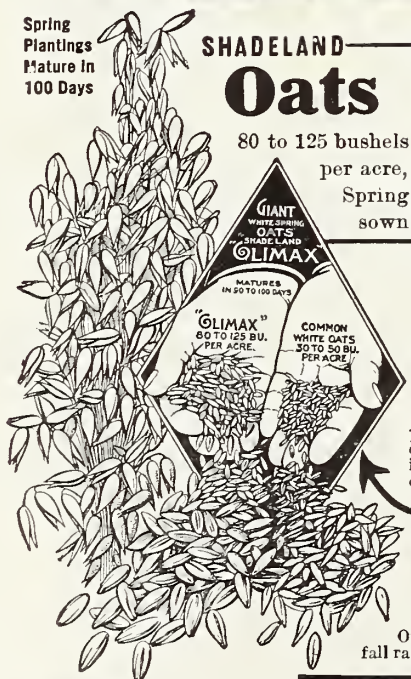
Stewart Hardware & Furniture Co.  
Hood River, Oregon  
22,000 feet floor space

# SEEDS

Spring Plantings  
Mature in 100 Days

## SHADELAND Oats

80 to 125 bushels per acre, Spring sown



## For GARDEN, FLOWER AND FIELD. Our 1912 Complete New Seed Annual Now Ready

A reliable reference and Buyers' Guide for Northwestern Growers

Fully illustrates and presents newest and most desirable varieties for market or home gardens. Specially adapted to Northwestern requirements.

Latest and best equipments for the FARMER, ORCHARDIST, POULTRY-MAN AND BEEKEEPER

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Our seed laboratory is equipped in the manner approved by the U. S. Dept. of Agriculture and is in charge of an expert seed analyst. No effort or expense is spared to safeguard our customers and insure the quality and purity of "DIAMOND QUALITY" Seeds

## COMPARE the big thin hulled grains of "Shadeland Climax"

with other oats—on the one hand we have quality, yield, hardiness and early maturity—on the other, later maturity with possible loss from early rain. Our seed crop has always been harvested before the fall rains. See catalog description.



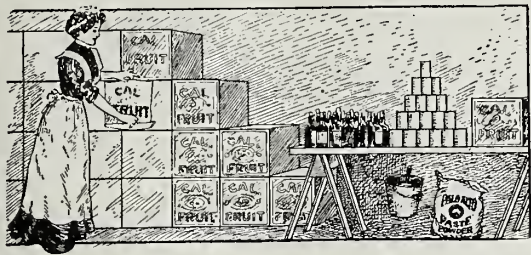
OUR DIAMOND TRADE MARK is a guarantee of Quality, Satisfaction, and Full Value, backed by 25 years of success right here on the Pacific Coast. Write a card today for 1912 Seed Annual.

## Portland Seed Co. PORTLAND OREGON

measure or infrequency. In order to overcome this irregularity, providing for the carrying off of the excessive measure and the storing or short measure for future use, drain tile are a recognized necessity. In order to supply undrained lands with sufficient storage of moisture it is necessary to suffer the loss incident to an excessive rainfall for a number of years that the subsoil becomes saturated to an extent to provide for the comparatively dry periods which are seemingly sure to follow. Deep under-drainage, or tile drainage, overcomes these troubles and insures a crop during seasons of abundant or excessive rainfall and again during seasons of drouth. Let us follow the theory of deep under-drainage, noting the claimed benefits, trace the natural laws under which the benefits work out, and prove to our satisfaction that thorough tile drainage is beyond doubt the most profitable undertaking or investment possible for the agricultural land owner to make."—Contributed.



## Paste for Labeling—"Palo Alto" Paste Powder



added to cold water, instantly makes a beautiful, smooth, white paste. Ready for immediate use at a cost of ten cents a gallon. No labor. No muss. No spoiled paste.

Paste Specialists  
**Robinson Chemical Works**  
 349-351 Eighth Street  
 San Francisco, California

## Takes Issue As to Pollenization Methods

A Recent Letter from Mr. H. L. Frost, Arlington, Massachusetts

A SHORT time ago in one of your issues you had an article on "The Pollenization of the Apple Blossom," which was somewhat disturbing to some of us who are planting orchards in the East. Your publication is without doubt one of the best in the country and is getting quite a wide circulation throughout the Eastern States. As the article referred to is quite contrary to the ideas of the growers here in the East, and also to some of the employees of the bureau of plant industry in Washington, I am taking the liberty of writing you at this time. This is a subject that I am very much interested in, and am at present getting all of the information that I can secure both as to varieties and the care and breeding of bees as affects the setting of fruit. I am sending you copy of a letter which I have just received from Washington, which you will note takes almost the opposite side of this subject from that as published by you. Have you any more data on the question than has been published during the past year? I value "Better Fruit" so highly that I have just become a subscriber and intend to keep it on file in my library.

The letter referred to by Mr. Frost is as follows: "Your letter of January 13, addressed to this department, in which you ask for information in regard to blossoming dates of apples in Massachusetts, noted, and I hand you herewith the dates of first bloom and full bloom of the Baldwin apple, at three points in Eastern Massachusetts, the record extending over a period of several years. These records will perhaps give you a fairly adequate idea of the usual period of blooming of apples in the section of Massachusetts to which these records apply. With reference to the blossoming dates of other varieties, the Baldwin may be taken in a general way as a guide. While some varieties blossom somewhat earlier and others later, this variety will, I think, serve as a general average. With reference to the varieties which blossom at approximately the same time as that of the Baldwin, and which, if planted together, would doubtless insure cross-pollenization, may be mentioned such sorts as Hubbardson, Tompkins King,

Rhode Island Greening, Roxbury, and in fact the majority of the varieties commonly grown in your section of New England would probably blossom at such a period that there would be a sufficient overlapping of the blossoming season to make cross-pollenization possible. The only exception to this which occurs to me at the present moment among the varieties widely known in the Northern apple belt is the Northern Spy. This variety blossoms as a rule several days later than most of the other sorts which are commonly found in the New England orchards. Yours very truly, H. P. Gould, pomologist in charge fruit district investigations."

### A GOOD SHOWING

The following is the financial statement of the Puyallup & Sumner Fruit Growers, Association for 1911:

Total receipts.....	\$461,189.50
Total disbursements.....	437,690.12

<b>Assets</b>	
Canned goods, supplies and personal property.....	\$35,786.26
Bills receivable.....	8,745.25
Cash in banks.....	23,442.09
Cash in safe.....	57.29
Unearned insurance premiums.....	837.31—
Plant account.....	26,908.46
	<b>\$95,776.66</b>

<b>Liabilities</b>	
Capital stock.....	\$ 1,936.00
Surplus.....	28,530.11
Express refund and interest.....	4,259.85
Bills and accounts payable and interest.....	61,050.70
	<b>\$95,776.66</b>

Earnings for year 1911, \$8,051.22. We, the undersigned, do hereby certify that the above statement is true to the best of our knowledge and belief. W. H. Paulhamus, president; T. H. Ridley, secretary.

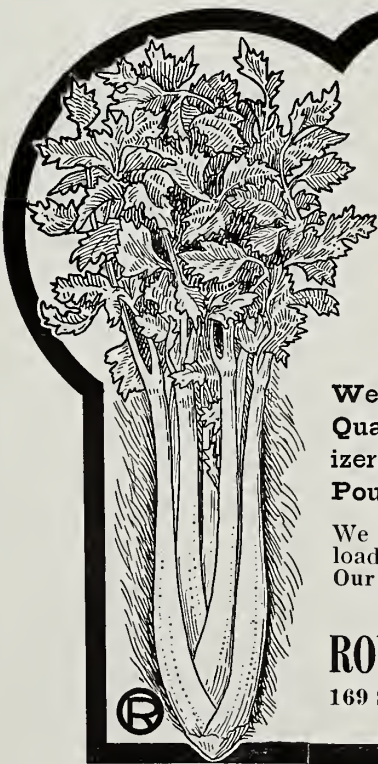
Kitselman Brothers, fence manufacturers, of Muncie, Indiana, have just completed their large catalogue of fencing. Their prices are extremely low when you consider the high quality of their fencing. Prices range from eleven and one-half cents a rod up. See their ad in this issue and write them for free catalog.\*

La Grande, Oregon, February 6, 1912.  
 The Grasselli Chemical Co., St. Paul, Minnesota:

Gentlemen: I have your letter regarding my experience with the Grasselli lead, and in reply beg to say that I have used this lead for the past three years with the most satisfactory results, having had less than two per cent loss from worms during that time. I find that this lead mixes very easily and remains in suspension longer than any lead I have ever used. Yours very truly, C. H. Conkey, president  
 La Grande Fruit Association.\*

## Idaho Pine Makes the Best Fruit Boxes

MANUFACTURED BY THE  
**LEWISTON BOX CO., Lewiston, Idaho**



## We Want You to Know

That we hold the same position among Seed and Tree Dealers as "Better Fruit" does among publications of its kind. You would not take "Better Fruit" if you didn't want THE BEST. Such being the case, let's get acquainted.

**We want your orders for our "Highest Quality" Seeds, Plants and Trees, Fertilizers, Sprays, Pumps, etc. Incubators, Poultry and Garden Supplies**

We are Importers, Growers and Buyers in car-load lots. No order is too large or too small. Our new 1912 Annual tells all. Ask for Book No. 27, the latest.

**ROUTLEDGE SEED & FLORAL CO.**

169 Second Street

PORTLAND, OREGON





## Washington Apple Box vs. Eastern Bushel Basket

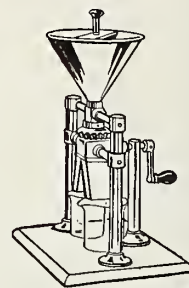
AN interesting and significant incident occurred after the close of the Northwestern Land Products Show in St. Paul, out of which the Western apple box comes triumphant. A large measure of the success of Western apple shippers in securing the best markets has been the attractive manner in which their products were placed before the consumer. The following letter was printed in the St. Paul Dispatch on December 21, and represents the average Easterner's impression regarding the capacity of the Western apple box: "I was at the land show and saw apples and apples. I asked for the price of them. The manager said: 'This apple sells for ten cents.' Well, if the apple growers can find enough Croesuses who are willing to pay them ten cents for each apple it certainly concerns nobody but the parties in interest. But I really did not go to the show to look at the apples, but to look for a packing case which would hold a bushel, and failed to see one. Long years ago the East supplied us with apples, and they were mighty good apples. They came in barrels. They do today, in barrels of the same size. When the Western apples came

on the market they came in bushel boxes. Then the Western apple growers had a bright idea. Why make the boxes hold a bushel when the same price can be got by shipping short bushel boxes? So the bushel boxes shrank until they now hold, I do not know how many pecks, but certainly not four. I know there are many people who will not buy Western apples until the growers pack their apples in bushel boxes, which hold four pecks."

F. D. Culver, of the Furey-Culver Company of Carlton, Washington, whose company won the sweepstakes cup at the land show for the best ten boxes of apples grown in the American Northwest, took up the gauntlet on behalf of the apple growers of Washington and achieved a public victory which should be of immeasurable value to every Western apple grower. He procured a sealed bushel basket from the state commissioner of weights and measures, and in the presence of the commissioner and his assistant and representatives of the Great Northern Railway, emptied a box of apples which had been packed in a standard box under association rules, into the sealed

## Testing the Seeds

That's what we are doing and by using every method and instrument



This is the Seed Mixer approved by the U. S. Government and used by us.

known to modern science and skill we eliminate chance and help make your harvest a bumper one.

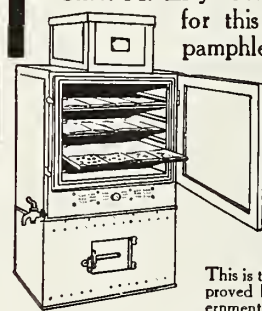
Every shipment of seeds that arrives at our plant is tested by an agronomist and expert seed tester before being placed in Lilly packages or sacks.

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are positively tested seeds—no guesswork, no naked eye inspection, but a scientific test is made for germination, purity and pedigree.

Let us send you a copy of our pamphlet on "Seed Testing"—of interest to all farmers. Write the Chas. H. Lilly Co., Seattle, Wash.

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This is the Germinator approved by the U. S. Government and used by us.

## Full-Bearing Apple Orchard

Finest in Lawrence County, Ohio

**For Sale at Great Sacrifice**

On account of ill-health of owner.

250 Acres, 20,000 Trees in One Block  
Sold as a whole or in blocks to suit.

## Apples Sell Higher

In Lawrence County than in Washington or Oregon. Prices obtained last two years prove this assertion.  
For particulars address

C. M. Davidson, Chesapeake, Ohio, No. 1



bushel basket furnished by the commissioner. The accompanying illustration shows the overflowing bushel that resulted. The St. Paul Dispatch printed the following letter from Mr. Culver, replying to the attack made by the man who was looking for a Western apple box that would contain a full bushel of apples: "Our attention has been called to an article in your paper of December 21, signed by E. Reiff of North St. Paul. Mr. Reiff attempts to cast discredit upon the Western apple grower by charging us with using short measure boxes. He states his object in attending the recent land products show was 'not to look at apples, but to look for a packing case which would hold a bushel, and failed to find one.'

We regret he did not make his mission known to attendants at the Methow Valley district exhibit, as we could have shown him not one, but fifty apple boxes in which our apples were packed that held a heaping bushel. The government standard of measure is the Winchester bushel, a cylindrical measure eighteen and one-half inches in diameter, eight inches deep and contains 2,150.42 cubic inches. The standard apple box, in fact the only box the Wenatchee Apple Growers' Association will accept from its members, measures (inside measurements) eighteen inches long, eleven and one-half inches wide and ten and one-half inches deep and contains 2,173.5 cubic inches. This does not include the swell of both top and

## Vaughan's Gladiolus Bulbs

The best results in flower beds and borders are secured from picked bulbs of superior quality. Vaughan's Flower Bulbs & Roots produce plants that are sure to bloom. Florists and private gardeners have used them for 35 yrs. Our Gladiolus Princes, Mrs. Frances King and Margaret are famous.

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mailed FREE to all buyers of Garden Seeds, Flower Seeds, Greenhouse Plants, Shrubs & Hardy Plants.

**SPECIAL**—For \$1 we'll send prepaid 25 large bulbs, comprising new Blues, Pinks, Yellows and Lilacs, in an even, well-proportioned mixture, also 1 ounce each of Vaughan's Spencer Sweet Peas, mixed, and newest tall Nasturtiums, mixed; or 50 small bulbs of above mixture together with our catalogue, 25c.

**VAUGHAN'S SEED STORE**  
 31 W. Randolph St. Chicago 25 Barclay St. N.Y.

bottom of box, which usually amounts to 125 to 200 cubic inches more. In order to refute this charge of using short measure boxes we secured a 'sealed' bushel basket from the state commissioner of weights and measures, Mr. Neale, and in the presence of said commissioner and his assistant, Mr. Staples, opened and unpacked one of our commercial boxes of apples. Its contents filled the sealed bushel basket heaping full. The apples, basket and box are on exhibition at the Great Northern ticket office, on Fourth and Robert Streets, and we most earnestly ask Mr. Reiff, or anyone else who has ever questioned the capacity of our Washington apple box, to call and satisfy themselves as to whether we are packing and marketing our apples in an honest or short measure box. The basket contains 125 Black Twig apples. In the original box all were paper wrapped and packed under association rules, five layers of twenty-five apples each, and branded 'Extra Fancy Black Twigs—125 count.' Our apple growers of Washington appreciate the advantage to the consumer the bushel box has over the barrel as an original package, and always have maintained that an honest pack in a full measure box is the most satisfactory way to market our crop. The fact of our Washington apples packed in bushel box selling for a higher price per box than Eastern apples packed in barrels sell for per barrel bears out this contention."

The heaping bushel of apples, with the Minnesota commissioner's seal on it, and the empty box have remained on exhibition at the Great Northern ticket office since the close of the land show, and is attracting considerable attention owing to the interest created in the Western apple growing industry by the Northwestern Land Products Show.—Contributed.

*Editor Better Fruit:*  
 I am enclosing herewith a one dollar William, for which you will please send me "Better Fruit" for one year. Our Mexican postal officials are not especially efficient in sorting out mail, and therefore I would ask that you kindly see that my street and number is included in the address. Very sincerely yours, Wilbur H. Lynch, superintendent American School Association, City of Mexico.

# Morse's

## GARDEN GUIDE

### for 1912

Our Guide this year is the fullest and most interesting we have ever issued

#### IN THE VEGETABLE LINE

it calls particular attention to some sterling novelties that every planter should try, including a new sweet corn, three varieties of culinary peas and a new wax bean.

#### IN FLOWER SEEDS

a new hybrid mixture of the Golden African Daisy, a new Snapdragon, and a new mixture of Giant Verbenas.

#### IN PLANTS

some wonderful new roses, Dahlias and Begonias are particularly described. This valuable book will be sent free for the asking.

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## THE KIND YOU CAN'T KEEP IN THE GROUND

They grow, and are true to name  
 Write for prices on your wants

188 Front Street **J. J. BUTZER** Portland, Oregon  
 Poultry Supplies, Spray, Spray Materials, Fruit Trees, Etc.



# Hood River Apple Trees For Sale

Hood River by its scientific apple growing has produced apples of such quality that they command the highest prices and are known in every market in the world.

It has specialized on a few varieties and developed them to perfection. From this stock, the most highly developed in the world, we have selected our scions, and now offer for sale—

VIGOROUS TREES, WELL ROOTED, TRUE TO NAME, AS FOLLOWS:

## Spitzenberg, Newtown, Ortley, Arkansas Black, Gravenstein

We also have a good selection of the other good standard varieties grown in the Northwest.

Our stock is the best. Please write us for quotations. You will find OUR PRICES ARE RIGHT.

## Hood River Standard Nursery, Hood River, Oregon

### Loganberry Growing In the Pacific Northwest

By A. B. Aspinwall, Brooks, Oregon

**H**AVE a good, deep, rich, dark loam soil, with preferably a clay sub-soil, as this will retain the moisture better than a gravelly or sandy soil. Land that is slightly rolling is to be preferred, as drainage is very important. The ground should be well prepared in the fall, then early in the spring should be thoroughly worked and put in good condition for planting. In obtaining plants be sure and get only first-class tip plants or good one-year-old transplants, as the growth of the loganberry for several years will depend on the start it gets. We plant them eight feet apart each way. This requires about 680 plants to the acre. In setting them out we mark the ground both ways and take out a good shovelful of dirt for each plant, packing it back in around the plant by hand to keep them from drying out.

After they are properly set out they should be worked at least once each week during the first summer with something to keep the surface stirred and hold the moisture. We use mostly the springtooth harrow and clodmasher and work them both ways. If planted in April the plants will not grow enough to interfere with the cultivation till late in the summer, when they will begin to shoot out over the ground, making vines several feet long before winter. Early in the fall build your trellises, using good cedar posts

seven feet long. Set them in the ground two feet and not over thirty-two feet apart in the rows, anchoring the end posts good. We use three No. 12 galvanized wires, putting the bottom one about twenty inches from the ground and the top one on top of the posts. It is best to run the rows north and south so as to give the sun a more even chance at the ripening fruit. In training the vines weave them around through the wires, spreading them over as much space as possible. Where the temperature goes below zero the vines should be put on the ground and covered with straw during the winter to

keep them from freezing. If plants are wanted for market or setting out more berries, train the vines over the wires and let the tips come to the ground, then cover them by plowing or with a trowel. They will then take root and make good plants for early spring. We cover ours in this way, and every winter and spring ship thousands of them to all parts of the United States and into Canada. It is best not to put the tips down, however, unless there is a good demand for plants or more are wanted for new yards, as it shortens the next crop by taking off the ends of the vines. As soon as the ground is ready to plow in the fall we plow it toward the rows and leave it in this conditions till spring so as to give the

## Mount Arbor Nurseries

E. S. WELCH, Proprietor 130 Center Street, SHENANDOAH, IOWA

Apple Seedlings—Surplus No. 3 at  
Special Low Prices

Royal Ann and other leading sweet  
and sour cherries

Bartlett and B. de Anjou Pears

Large Stock Ornamental Trees, Shrubs,  
Roses, Clematis, Poplars, Carolina,  
one year and larger in car lots

Make a specialty of a  
Complete Line of General  
Nursery Stock

We have superior storage  
facilities and carry a  
large assortment of stock  
in storage for winter shipments

Let us quote your wants



## Whole Root Non-Irrigated Trees AT BARGAIN PRICES

APPLE, PEAR, PEACH, CHERRY, ETC.

Order at once before supply is exhausted and save money

P. S.—Enclose  
this ad

LAFAYETTE NURSERY CO., Lafayette, Oregon

# CREATION



The tone is the Jewel.  
The case is the Setting.  
The combination is the  
Steinway—the Perfect  
Piano.

**H**E who is blessed with the power to create is blessed with God's greatest gift to man, and if he uses that power to increase the happiness of his fellow men he becomes a benefactor to the human race.

The world owes homage to the men who have devoted their burning energies to the consummation of one purpose, to the final and most perfect development of an ideal.

## THE STEINWAY PIANO

Is an example of the grand result of years of persistent, purposeful striving after the very highest musical ideal. Sons have taken up the task where fathers left off, so that alternate generations of genius, working through the finest piano factory in the world, have evolved the Steinway—a piano that has long since been acknowledge the musical masterpiece of the ages.

Priced at \$575, \$625, \$775 and up to \$1,600. Of course you can buy a piano cheaper, but it will be a cheaper piano.

Why not get the best?

VICTOR TALKING  
MACHINES and  
SHEET MUSIC

**Sherman Clay & Co.**

SIXTH AND MORRISON  
PORTLAND, OREGON  
Exclusive Steinway Representatives

water a chance to run off between the rows. In the spring we plow it away from the rows, then, after hoeing between the hills, take a disk harrow and throw the dirt back to the rows, leveling the ground. From then on during the summer we work with a springtooth harrow and clodmasher about once each week. It is also a good plan to loosen up the dirt around the hills with a spading fork. The new shoots should be kept trained into the rows so as not to break them off in working with the teams.

As soon as we are through picking we get all the help we can and cut out the old vines and train up the new ones for the next crop. We throw the old vines between the rows and cut them up with a disk harrow or they

can easily be plowed under and serve as a fertilizer. The cost of setting out, trellising and caring for a new yard up to the first crop, which will be the next year after they are set out, is about \$75 per acre. Of course, this depends greatly on the cost of plants, material and labor, and also the size of the yard, as ten acres can be handled at less cost per acre than a one-acre yard. The first crop should be from one to three tons of fresh fruit to the acre, and after that a good average yield is from four to five tons to the acre, but they frequently go six or seven tons on good lands with proper care.

When the berries are ready to pick everything should be ready to handle the crop, as a few hot days will ripen the berries very fast. It requires four

or five good pickers to the acre when they are to be evaporated, as they should be picked every third or fourth day, but when picking for market more pickers are needed. The berries are now put onto the market fresh, sold to canneries or evaporated, and also make a very good wine. Where they are put onto the market fresh they must be picked firm enough to carry to destination, but will stand to be fairly ripe when sold to the cannery and should be fully ripe to be evaporated. We find the evaporator the best means of handling them, as we have the world for a market and our evaporators run every day and night during the picking season. It requires about five pounds fresh to make one pound of evaporated berries. The demand for evaporated loganberries has been increas-

## Fruit Trees

Grimes Golden, Jonathan  
Newtown, Rome Beauty  
Spitzenberg, Winesap

and other commercial varieties

### PEARS

Bartlett, Comice, D'Anjou  
and Winter Nelis

We also have a fine lot of other high grade Fruit Trees, including Peach and Cherry

Catalogue on request

W. C. HOPSON, Milton, Oregon

## Get Catalog and Price List

420 acres devoted to nursery purposes

## THE WOODBURN NURSERIES

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GROWER OF CHOICE  
Nursery Stock

F. W. SETTLEMIER, Woodburn, Ore.

## THE OLD RELIABLE Albany Nurseries

Received highest award for display of apple trees at the big California Apple Show at Watsonville.

The above speaks for us.

For good grade of nursery stock and right prices address

**The Albany Nurseries**  
(INCORPORATED)  
ALBANY, OREGON

Salesmen wanted. Easy to sell our trees.



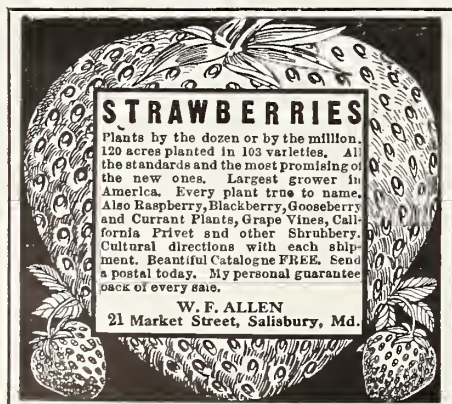
ing since they were first evaporated some four or five years ago until it is so great that there are not enough raised at the present time to half supply the wants of the people where they have been introduced.

As to the future of the Oregon loganberry I must say that one can hardly realize at the present time what it will be, as it has no equal for pies, jams and jellies, and while it has been introduced into but few markets of the world the supply is far from equal to the demand and it is winning favor wherever tried. Many prefer the evaporated product to the fresh berry for pies and cooking purposes, and the transportation charges to distant markets are much less. Only a few years ago the canneries could not handle them successfully owing to the acid working on the tin cans, and they never evaporated, so the only market for them was to ship them fresh and take what the people were willing to pay, and usually about the height of the season running up against a "busted" market, the consequences of which were that thousands of crates were dumped or sold for little or nothing, but today, by canning and evaporating them by modern methods and opening up new markets, there is no question in my mind but what there will always be a market for the loganberries. Next spring hundreds, if not thousands, of acres will be set out in Marion County, Oregon. Parties who now have yards are enlarging them, and others who have watched the conditions are setting out other large yards, and land that a few years ago could be bought for \$50 an acre is today worth from \$600 to \$2,000, or even more, per acre when set out to loganberries, as the net profits by present methods of handling are now handsome, and indications are that in the years to come the greater demand for this most luscious fruit will make very favorable returns on investments.

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High grade, varieties true, no disease. Freight paid to your station. Full value for your money and satisfaction guaranteed. Write at once for new descriptive price list.

NEW HAVEN NURSERIES  
Dept. D New Haven, Missouri



## Proof of Success No. 78

STACEY ORCHARD COMPANY  
Growers and Shippers of Apples  
L. S. Mann, Manager

Schellenger Fruit Grading Machine Company Tremonton, Utah, February 8, 1912.

Gentlemen: From a buyers or shipper's view, we certainly wish every grower owned one of your machines, as it insures good pack with inexperienced help.

We handled some thirty cars the past season that were run through your grader and found on all these cars the pack gave entire satisfaction.

It will be but a short time until growers will have "Machine Graded" as trade mark for fancy fruit.

Yours truly, (Signed) L. S. MANN, Manager.

Our 1912 machines give SIX SIZE GRADES and the grading is done according to the cheek to cheek diameter, therefore they will grade the elongated varieties successfully.

The Schellenger Adjustable Wiper Attachment wipes the fruit at the same time it is being graded, any degree of wiping desired, from a mere dusting to a polishing.

The WORST thing about our machine is that before seeing it many growers think it is too good to be true. If they were only one-half as good, people would buy them sooner—they would not have to believe so much at once.

The BEST thing about our machine is that it GIVES EVERY PURCHASER ENTIRE SATISFACTION. IT DOES THE GRADING WITH MECHANICAL ACCURACY, ABSOLUTELY WITHOUT BRUISING. Hadn't you better look them up? Write for our March, 1912, Bulletin.

SCHELLENGER FRUIT GRADING MACHINE CO., Inc.

633-635 South Fourth West Street

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# D. Crossley & Sons

ESTABLISHED 1878

## Apples for Export

California, Oregon, Washington, Idaho and Florida fruits. Apples handled in all European markets at private sale. Cheeks mailed from our New York office same day apples are sold on the other side. We are not agents; **WE ARE SELLERS.** We make a specialty of handling **APPLES, PEARS AND PRUNES** on the New York and foreign markets. Correspondence solicited.

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## For Sale

87 acres under ditch, set to orchard, on the celebrated Brewster Flats, two miles from Brewster. 750 apple, 668 pear, 573 peach and 60 cherry, all two years old. 4,500 apple, 275 peach, 315 cherry, one year old. All in high state of cultivation. No better fruit land in the world. Railroad will build within half a mile of tract this year. This proposition will bear the closest investigation. References exchanged. No trade considered. For further particulars, terms, etc., address

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# Authentic Information

REGARDING HOOD RIVER VALLEY

We will be glad to furnish you with full details of our valley and give you a list of what we have for sale in improved and unimproved land. At the present time we have some desirable buys. Will send you literature on request.

Reference: Any bank or business house in Hood River.

**Guy Y. Edwards & Co., Agents**  
HOOD RIVER, OREGON



# FACTS

After others fail to do your work test the famous "Tower." 500 miles of successful demonstration, 500 miles of big selling success last season, with a continuous stream of orders this season to add to the result.

## PROVED

That the "Tower" has no equal. I sold to men with 5-acre tracts; I sold to men with 2,000 acres of orchard tracts; I sold to men last June, July and August who had bought new orchard tools in the spring.

## BECAUSE

I tested the "Tower" in their own orchards, with their own teams, where they failed with the tools bought in spring, and paid double the price of the "Tower." The "Tower" was "the winner" of an order in spite of lateness of the season.

They saw the "Tower" produce a dust mulch in one operation that cannot be produced in two to six operations with other tools.

They saw it work in hard, dry ground and under the most adverse conditions.

They saw it cut out weeds and cut them up.

## There's A Reason

The cutter-heads are flexible and adjustable, and the knives are adjustable to suit all conditions of work.

Thirty years of successful manufacture, with tremendous increasing annual sales. 13,641 for 1911 season.

I have more facts of vital interest to every orchardist and tiller of the soil. Send today for circular, "The Tower Line."

**R.A. BAKER, Western Agent, Nampa, Idaho**

## Open-Head Method of Pruning Our Old Orchards

By E. F. Cole, Coveseville, Virginia

FOR some time the writer has been desirous of giving his ideas and experience on pruning, but has refrained from doing so for lack of authoritative approval of his methods. This obstacle has been removed, however, by two papers from very able experts of other states before our State Horticultural Society at Harrisonburg this winter, who approved practically in detail the method herein set forth. My object is not to improve on these papers, but rather to confirm them with reference to our own local conditions and my own personal experience.

The average orchard as we find it today is not trained in a form to produce the best and most economical results either as to the amount of fruit produced or as to the best quality. In the first place the trees in our older orchards are in most cases headed too high. It is not usually advisable to change this, however. Secondly, they are allowed to grow too tall to be profitably worked. The height of the trees can be reduced and the method of pruning greatly improved upon. The errors, as we find them, are mainly two. On the one hand the tops have been allowed to grow too thick from an almost total lack of pruning; on the other hand they are often thinned out too much, forcing the fruiting wood near the ends of the branches and toward the tops of the trees. The results of either method are equally pernicious. Those who have had experience generally recognize the fact that if the tops are more than fifteen to twenty feet high the trees cannot be sprayed nor the fruit handled to the best advantage. This method has brought about the introduction of the open-headed method of pruning now practiced in the new orchards of the West, and of which we now wish to deal with reference to the old orchards of the East. As a result of this form of pruning we have the cut-back orchard, or, as Mr. Drew says, we prune down

those trees which other people have pruned up.

Most orchardists, and some horticulturists do not advocate the cutting down of high trees on theoretical grounds. They do not believe that the wounds will heal or that the desired results can be obtained. We know now by actual experience that these objections have been overcome with perfectly satisfactory results, even outstripping our highest expectations. It is hard to lay down an exact rule for cutting as the types of trees vary somewhat, but in all cases if the tree be too high to be economically worked it should be lowered by removing the central or vertical branches at the crotch, or as near the crotch as possible.

With trees of upright growth like the Newtown the resulting form resembles an inverted umbrella when the tree is dormant. When the tree is loaded with fruit the remaining branches bend down, assuming the graceful drooping form so much sought after by the man who grows the fancy box fruit. In dealing with trees like the Winesap the principle is the same, but the form of cutting should be varied slightly from that employed with more upright and closer growing varieties. Sometimes, for example, instead of removing a central or upright shaft from the tree the removal of one or two side branches which have been allowed to grow too high will reduce the tree to the desired form.

## To Nurserymen and Planters of Home and Commercial Orchards

We have earned a reputation for growing and marketing the cleanest and best stock planted in the West.

A card will bring you our surplus list, and prices that are just right.

*Have you ever tasted a Goodell Strawberry?  
If not, one more pleasure may be yours.*

*We grow the plants.*

**The Sunnyside Nursery Co.**  
SUNNYSIDE, WASHINGTON



The practical orchardist needs only to be reminded that the two or three-story tree can be lowered to the basement without evil results and he will soon master the correct method of accomplishment. The following general rule, however, may be laid down for cutting. As Mr. Surface has said, "Get into your mind first the form which the tree should assume two or three years hence and then cut to produce that result" by removing all upright branches to the crotch or to a suitable feeder, at least one-third the size of the limb removed, which, if loaded with fruit, would remain rigid. Thus we tend to produce the open head or inverted umbrella form. As much as possible the cutting should be done on the inside of the tree so as to push out the side branches to broaden the top. Never remove a fruit spur or small limb from near the crotch of the tree without special reason, as the same may bear fruit, and unless it assumes the form of a water sucker it cannot possibly do any harm. Those who practice this form of pruning deserve to be characterized as "tree butchers." When the tree is loaded with fruit the branches droop gracefully in all directions, and the layer or limbs nearest to the ground should touch the ground at the tips if possible, acting as a support for itself and also for the limbs above, thus dispensing with artificial supports.

As stated above, the theoretical objections most often advanced adverse to this method is one of skepticism about non-healing or sun-scald, all of which are proven by actual practice to be unfounded and false theories, and the writer challenges an example to the contrary. After having had several years' experience in cutting trees of all ages and conditions by this method, and also in top-working (cleft grafting) old trees we have yet to see a single example of permanent injury from cutting when subsequently the trees are properly nourished, even when a wood preservative be not used. Paint or coal tar may be used for this purpose if you feel that it is safer, but you will in all probability dispense with this, except for very old and decrepit trees, after a few years' experience. So far as the writer is aware there is not a single disadvantage in this method of pruning, while the advantages are many and manifest: (1) The primary object is attained by bringing the trees down where they can be handled economically. (2) In addition to this they will bear a great deal more fruit per bearing surface. The reason for

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We will give the Farm Journal (Philadelphia) for two years (new subscription) and "Better Fruit" one year (old or new) for \$1.25. The Farm Journal is one of the best papers published on general farming in the United States. Any of our subscribers wanting a farm paper will find the Farm Journal valuable and instructive.

## SALEM HEIGHTS NURSERY

Royal Ann, Bing and Lambert Cherries, on true Mazzard roots and guaranteed true-to-name a specialty. Scions cut from selected bearing trees. Also a fine stock of Spitzenberg, Yellow Newtown, Jonathan and Delicious Apples, Berry Vines and Bushes, and Choice Roses.

Write what you want and I will quote you living prices

H. H. CROSS, 532 North Liberty Street, Salem, Oregon

## TO PROSPECTIVE PLANTERS OF VINEYARDS

I offer for spring delivery: Healthy, well rooted, two-year-old vines of the following varieties: Sweetwater, Ranumonia, Muscat, Malaga, Tokay, Emperor, Cornichon. These vines are grown from selected wood from vines that have borne crops from 10 to 20 years and are thoroughly acclimated. Also one-year-old roots of same varieties. Special rates in quantities.

Address R. SCHLEICHER, Lewiston, Idaho

## YOUR INCOME

depends upon the kind of nursery stock you get. If you are willing to pay a fair price you will get good trees. YOU CAN'T GET SOMETHING FOR NOTHING. If you expect to pay next-to-nothing and get good, first-class stock, you are mistaken, that's all. You can't produce a high quality tree for little or nothing any more than you can an axe, wagon, or any implement.

YOU ARE THE LOSER if you let the question of price alone influence your judgment when buying. Your loss is not temporary, but extends over a long period of years, or as long as your orchard stands. The folly of buying cheap stock will be impressed upon you each year as you figure your returns. Better be on the safe side and buy where you are sure of getting just what you want.

Our sales this year could not have so largely surpassed last year's had we not made good in the past.

Catalog free.



**Yakima Valley Nursery Company**

More Salesmen Wanted

Toppenish, Washington

## NOTICE—SPECIAL SALE

Apple Trees, Peach Trees, at prices that are lower than the lowest, and for trees that cannot be surpassed by any. Also full line of other nursery stock. Write for special list, mentioning "Better Fruit," to

J. H. LAUTERMAN, SALEM, OREGON

## Chico Nursery Company

GROWERS OF

High Class Nursery Stock

The best that good soil, care, skill and long experience can produce  
Write us for prices on Grape Vines, Cherries, Apples, Peaches, Pears, Nut Trees, Ornamental Shade Trees, Flowering Shrubs and Roses  
Peach Seed for sale Catalogue free

CHICO NURSERY COMPANY, Chico, California

## FREE EXPERT ADVICE

By Professor A. Van Holderbeke, five years Washington State Horticulturist

### TO FRUIT GROWERS

Purchasing high grade nursery stock, guaranteed true to name, from the

**VAN HOLDERBEKE NURSERY COMPANY**

Nurseries:  
Spokane Valley and  
Kennewick, Washington

**RELIABLE  
AGENTS  
WANTED**

Main Offices:  
Columbia Building  
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# TREES

## "TRUE-TO-NAME"

Grafted & Seedling Walnuts, Grapevines

We have the largest and finest assortment of all the finest French and English walnuts ever grown. Our grape vines are fine strong plants, well rooted, and include the commercial table and shipping grapes, as well as raisin and wine.

In addition to this we have the most complete line of fruit trees, ornamental stock and roses on the Pacific Coast. We make a study of what is suitable to plant in the interior valleys, the coast counties or the foothill regions. We have been growing nursery stock in California for over 28 years, and you will find that it pays to write us what your requirements are and secure our suggestions, as well as prices.

There is a greater call for fruit trees of all descriptions this season than has been experienced in years—therefore it is urgent that orders be placed

### NOW

#### CATALOGUE SENT FREE

Write for our illustrated price catalogue, which contains brief descriptions of all our stock, including many new varieties, Burbank's latest creations, etc.

"California Horticulture" describes over 2,000 varieties of trees and plants, contains many valuable suggestions about planting, pruning, etc., profusely illustrated, containing 120 pages, will be mailed on receipt of 25c in stamps.

PAID UP CAPITAL \$200,000.00

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NURSERY CO.**

## TREES

Not little sprouts or saplings, but healthy specimens with perfect

## ROOTS

We go strong on roots, for we know your future harvest and our future business depends on root insurance—Good roots mean good fruits.

CATALOGUE FOR 1912

It is yours for the asking. Send for a copy and make your selections now. All plants listed by us are perfectly true to name and description. Shipment when you request.

**RICHLAND NURSERY CO.**

**RICHLAND, WASH**

which is explained thusly: (a) The central top of the tree if left intact tends to assume the nature of a water-sucker which draws on the remaining branches, but when the top is removed we have the opposite effect, that is, we throw the strength to the side branches, where most of the fruit spurs are borne. (b) Again, the sunlight is allowed to penetrate to the center of the tree in a more effective way than is possible with the closed top, thereby making it feasible to grow the fruiting wood much more thickly. To have this thickly growing bearing wood is especially valuable if you wish to grow a high percentage of fancy fruit and at the same time grow quantity, for the following reasons: Suppose your tree has been pruned by the old fashioned close head and thin-out method which forces the bearing wood toward the ends of the branches. As a result you have clusters of apples on the same fruit spur or twig, which makes it impossible to grow first-class fruit, because of the law of the survival of the fittest and because of the natural harbor made thereby for the codling moth and for the lesser apple worms.

Is it not infinitely better to have an added number of fruit spurs and bearing twigs and have the fruit singly borne? Perhaps you may grasp the philosophy of my statement more clearly when I say that it is better to have a single apple on each of five twigs, or disconnected fruit spurs, than to have five apples all growing on one twig or spur when four of the five must be removed by thinning before you can grow a very high percentage of first-class fruit. Do you gather my meaning when I say that it is better to grow five boxes of first-class fruit on a tree by proper dissemination of the fruiting wood than to grow one box near the tips of the limbs and the tops of the trees at the same cost? (3) Still a third advantage, and one which is contrary to horticultural lore, is this: It has been usually conceded that winter pruning tends to produce wood and summer pruning to produce fruit, but the writer has, in two or three instances, demonstrated that the removal of the tops from thriftily growing trees, ten to twenty years of age, in the dormant period tends to fruit them sooner and more abundantly than could otherwise be expected in three or four more years by the close-head method. The reason for this is manifest, as the removal of the sappy and rapidly growing top gives the tree a temporary check of growth and also throws added strength to the fruit buds on the remaining branches, which causes more profusion of buds to set fruit.

During the past three years which we have been using this method of pruning trees here in Albemarle County we have observed the following facts in reference to the regard in which our method is held by our neighboring orchardists: A few have adopted our method at sight without waiting to see the outcome, others have attempted to



## COULD YOU USE A GOOD SPRAYING CALENDAR?

We have just had a small circular printed which contains valuable information on when to spray, what to use, what to spray for, etc., as recommended by the Washington Experiment Station at Pullman, Washington. If you grow nothing more than a few berries in the back yard, you need this bulletin. Just drop up a card, and a copy will be mailed you free.

If you are in the market for anything in the nursery line, and want good, clean, thrifty, guaranteed stock, just mention it to us, and we will be glad to go into the matter with you. We have the finest block of all the staple varieties to be found in the West.

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TOPPENISH, WASHINGTON

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We need a few more live hustlers to represent us in good territory. Let us explain our proposition.

## ABOUT PLANTING TREES

When you are sick do you employ an inexperienced physician, or when in business troubles an attorney who has just been admitted to the bar? Then why, when the important step of planting a commercial orchard is contemplated, should you not use the same discretion and insist on getting trees that are grown right, propagated from trees that have proven their value and annually bear large crops of select prize-winning fruit?

The planting of an orchard is an epoch in your career, and before undertaking the work it is a good thing to make a careful investigation into the relative merits of the trees you intend to plant. Be sure that they are propagated from trees that are early, abundant and regular bearers of fancy fruit.

The mistake of an attorney may be corrected by court, those of the physician can be buried, but those of an orchard stand as lasting monuments of folly and reproach. THE CHARACTERISTICS OF THE PARENT TREE APPEAR AGAIN IN THE YOUNG TREE AND ITS FRUIT. In selecting the trees for your orchard choose those that have the money-making features and thereby assure certainty of results.

Our Northern Grown Nursery Stock is propagated from trees that are early and prolific bearers of fancy fruit. Buy our pedigreed stock and get results.

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## FOR COMMERCIAL ORCHARDS

We have a fine lot of nice budded one-year-old stock in apples

JONATHANS  
YELLOW NEWTOWN PIPPIN  
SPITZENBERG  
WINESAP  
GRAVENSTEIN  
WAGENER, Etc.

And in pears—

ANJOU  
WINTER NELIS  
HOWELL  
COMICE, Etc.

JOHN A. STEWART & SON, Props.  
**CHRISTOPHER NURSERIES**  
Christopher, King County, Wash.



approximate to the open-head method. Instead of cutting out the centers to the crotch or suitable feeder they simply cut off a foot or two of the tips of the longer limbs. The result is quite evident if you will stop to think what must take place two or three years in the future. As a precaution I would suggest at this point that if you cannot be practically certain what the future will bring forth you better, for the sake of the welfare of the orchard, try it on a small scale at first and await developments, for when the tips are cut off in this way the ultimate result is a compound head for every limb that is cut, and after three or four years' growth you have a top so thick and high headed that the only remedy is to entirely rehead the trees at the crotch. A further advantage of this form of top is found in the recent tendency to grow for quality rather than for quantity of fruit, necessitating thinning, a process which is well nigh impossible, and certainly, to say the least, laborious, on high and close-headed trees. While on the other hand, with the modern open-head tree it is a comparatively easy process to thin as well as to gather the fruit. Those who attended the meeting of our horticultural society this season will recall that these sayings were approved, at least in principle, by Messrs. Surface of Pennsylvania and Drew of Connecticut, recording their experience in their respective states. This last both in justice to these men of eminence and because "a prophet is not without honor save in his own country."

#### FRUIT RECEIPTS AT SEATTLE

The number of boxes of apples, peaches and pears received in Seattle, Washington, for the years 1910 and 1911 were as follows:

##### APPLES

1910	Boxes	1911	Boxes
January	15,891	January	24,417
February	22,395	February	30,268
March	24,902	March	34,410
April	16,961	April	13,434
May	11,237	May	3,114
June	2,762	June	864
July	22,557	July	5,802
August	28,869	August	17,557
September	43,382	September	43,908
October	76,174	October	83,063
November	83,637	November	70,960
December	38,702	*December	40,000
	387,469		368,827

\*Estimated.

##### PEACHES

1910	Boxes	1911	Boxes
June	525	July	11,953
July	20,466	August	76,232
August	148,927	September	158,296
September	107,837	October	20,850
October	5,407		
	283,162		267,331

##### PEARS

1910	Boxes	1911	Boxes
July	3,933	July	132
August	18,352	August	16,286
September	13,103	September	20,752
October	4,616	October	6,330
November	1,331		
December	197		43,500
	41,535		

Total of fruits received in 1910 from Washington, standard package, was 1,088,635, and from outside the state 934,314, making a grand total of 2,022,949 boxes. There is an increase of shipments this year over last year.

## MR. PLANTER

Just get your eye on this if you expect to plant apples or peaches. We have a big surplus in the following, and it's a shame to see such splendid trees here and not in your orchard. We'll give you a chance at them that will be to your interest. Let us know your wants for spring planting.

### APPLES

Jonathan  
McIntosh Red  
Newtown Pippin  
Orengo  
Rome Beauty  
Spitzenberg  
Vanderpool Red  
Wagener  
Winesap

### PEACHES

Crawford's Early  
Early Charlotte  
Elberta  
Fitzgerald  
Foster  
Perfection  
Champion  
Hale's Early  
Triumph

**SALEM NURSERY COMPANY, Salem, Oregon**



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We have a large and complete line of fruit and shade trees, ornamental shrubs, vines, roses, etc.

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Wholesale and Retail

Wenatchee, Washington

WE HAVE ONLY A FEW THOUSAND OF THOSE

## Yellow Newtown, Spitzenberg, Ortley, Arkansas Black and Winter Banana

that you saw a photo of in the October and November issues. We have some small lots of other leading varieties, as well as pears, cherries and peaches.

Bear in mind that these trees were all grown on well drained virgin soil, on No. 1 whole roots, all buds selected from the best bearing trees in Hood River, and we guarantee every tree true-to-name. You can save agent's profit if you buy direct from us.

Write at once for prices, before it's too late. Address

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Non-Irrigated, Whole-Root Trees

We have them. Write us your wants. We pay freight and guarantee arrival in good condition. A Few Reliable Salesmen Wanted

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New Horticultural Organizations

By Horace G. Cotton, Pullman, Washington

A NEW horticultural organization has been formed at the Washington State College which differs in its nature from any other organization in the Northwest. I am not a member of the organization yet, but as I am taking horticulture here and also "taking" the "Better Fruit" magazine I think this interesting organization would be of interest to the readers of "Better Fruit." The organization is known as the Washington State College Pruning Association. Its purpose is to bring together the good tree pruners of the horticulture department and organize in such a manner that calls for scientific pruners sent to the college could be filled with men who are "on the job." And further, who by their good work will give the institution a boost instead of a "black eye."

In years past there has always been a few men scattered throughout the orchard districts of the Northwest who have found an occupation by posing as expert pruners and a product of this or other horticulture institutions. Some of these men have been members of a college, but were entirely incompetent as pruners; others have never even seen a horticulture institution. Their work has done much more injury than good. A striking case of this kind presented itself last summer. A former member of the college advertised himself in North Yakima as a scientific pruner and a product of the Washington State College, giving the impression that he was a graduate of the horticulture department. He received many calls for pruning work. His work was worse than no pruning at all. As a result the college received a bad reputation in every community in which

this man worked. It was found later that this "scientific pruner" had taken an artisan course here, but had registered in none of the horticulture classes. Thus the impression gained by his statement that he was a "product of this institution" was an entirely erroneous one. Of course, he meant the impression to be such. To eliminate such nondescripts, to advertise the school and at the same time to offer members of the horticulture department much practical experience it was deemed advisable to organize a club of this kind.

The constitution adopted is of such a nature that only those who are expert

in this work will be eligible for membership. To become eligible applicants must pass, first, a theoretical examination on the principles of pruning and the different methods of pruning the different varieties of commercial fruits, and later a practical test in the field. Both examinations will be supervised by a faculty member of the department. If this part of the constitution is strictly adhered to orchard owners will be benefited. A good reputation will be established, and as a consequence the horticulture colleges of the Northwest will receive the right kind of a boost, namely, a reputation for producing efficient men. The bad reputation formed in the communities infested by impostors would gradually be superseded by a reputation for good work. After passing the examinations the new member will be given a letter of recommendation signed in the name of the association stating that he has the ability to do expert pruning. With a reputation behind the club, such a recommendation would be of great value to the possessor. The officers of the association for the coming semester were nominated and elected at the Washington State College Horticulture Club's last meeting. The results of the election were as follows: For president, C. H. Harvey of Peshastin, Washington; vice-president, E. C. Hunt of Pullman; secretary and treasurer, Roy E. Smith of Wenatchee; corresponding secretary, H. G. Cotton of Pullman. From the number of letters received by the horticulture department from orchard men throughout the state it seems that the fruit men are thinking of the fake pruner problem and will heartily endorse a movement of this kind. As false pruners are in every fruit section of the Northwest this association would be much pleased if the horticulture department of our sister school at Corvallis would take some step of this kind to help preserve the good reputation of competent college pruners.

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FRUIT GROWERS, YOUR ATTENTION

Royal Ann, Bing and Lambert cherry trees; Spitzenberg and Newtown apple trees; Bartlett, Anjou and Comice pears, and other varieties of fruit trees.

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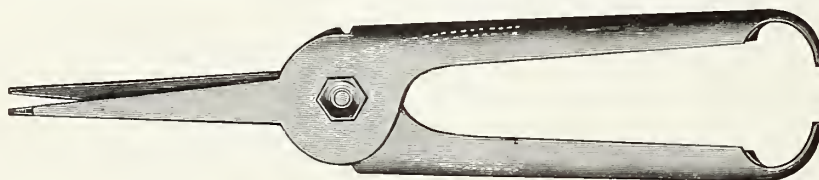
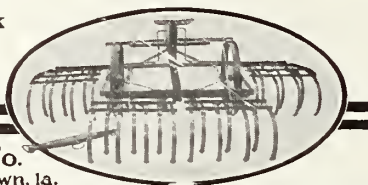
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## The Precooling of Fruit Problem

Address of Gordon G. Brown, at Annual Meeting of Oregon State Horticultural Society

**A**MONG the many problems now being worked out by the bureau of the plant industry perhaps none has attracted a keener interest among horticulturists than precooling—a new idea concerning the preparation of perishable fruit for long distance shipment. Before I attempt to explain the principles behind or the reasons for such an operation, allow me to review briefly some of the conditions leading to its introduction. Georgia and California, previous to 1904, complained of being unable to ship ripe peaches in refrigerator cars to a distant market without incurring heavy losses because of over-ripening and decay during transit. Trouble was also experienced in California with oranges and grapes. Unless those fruits were shipped almost immediately after picking blue mold and other forms of decay set in before they reached the market. The orange growers lost \$1,500,000 in one year because of this fact. Trouble was also experienced with other perishable fruits.

In 1904 the bureau began an investigation. Fruit was studied in the field, in the packing house, in the

car and on the market. Although it was shown that considerable losses were due primarily to careless handling, nevertheless it was also pointed out quite clearly that our refrigerator car system, unaided, is unable in many cases to produce or maintain conditions necessary for the preservation of perishable fruits in long distance transit. This is due to two fundamental causes. First, the refrigerator car does not lower the temperature of the fruit quickly enough. In the ordinary iced shipments the fruit is loaded in a warm condition and it requires several days before the temperature is reduced sufficiently to retard ripening and decay. Second, temperatures are not uniform. In the refrigerator car the fruit is cooled by a very slow gravity circulation of air from the ice bunkers. As the air leaves the bunkers it is often as low as 34 degrees Fahrenheit. It is warmed by contact with the fruit, and as it arises and passes over the fruit it becomes still warmer before it reenters the bunkers of the car. Thus the temperature of the fruit in the top tiers is usually several degrees higher than that in the bottom. In brief, then, these

are the fundamental difficulties with present methods of handling perishable fruits in long distance transit. They limit the distribution of fruit to that area over which the top tiers may be safely transported. They also make necessary the premature harvesting of summer fruits, to provide against this ripening, thus placing in the hands of the consumer an insipid, flavorless product.

It is apparent how precooling—the process of rapidly and promptly reducing the temperature of the fruit immediately after it is picked and before it is stored or shipped—has largely overcome these difficulties. It is accomplished either by mechanical refrigeration or by using cracked ice and salt either before or after the fruit has been

## Printing

We invite inquiries from all Nurserymen, Fruit Growers and Manufacturers who contemplate the issuance of

## Catalogs Advertising Matter

or Printing of any kind. We make a specialty of out-of-town orders and handle them with a facility unequaled anywhere. Our thorough equipment makes possible a high quality of work at a low cost. Send us specifications of your work and we will give estimate by return mail. You will find us prompt, accurate and equal to anything in the production of GOOD Printing. *Better Fruit* is printed in our shop. Its beautiful appearance bears testimony to our skill.

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For maintaining a dust mulch in an orchard and for keeping down weeds the Kimball Cultivator is without an equal. Its blades cut about three to four inches under the surface of the soil, pulverizing the soil and leaving it level; all weeds are cut and germination of weed seeds prevented by leaving the soil in loose condition.

The Kimball Cultivator works well out from the horses, and soil can be stirred close to trunks of trees, with horses walking out in the open. The Kimball takes a wide sweep at a time, and eight to ten acres of orchard can be cultivated per day. Thousands of Kimball Cultivators are now in use, and every person who has one recommends it. Mr. Irvine, editor of *The Fruit-Grower*, used two Kimball Cultivators at Morrisania last season; ask him what he thinks of them. Ask him also if the Kimball is not an ideal cultivator for any part of the country; he will tell you it is an ideal soil-stirring implement.

## Clean Cultivation of Orchards Pays

It not only conserves moisture, but destroys the hiding places of insects, such as curculio, which are often serious orchard pests. Apples grown in cultivated orchards ripen later and consequently keep longer; they are of larger size and are usually smoother. The cost of cultivation is not excessive if Kimball Cultivators are used. Send for free booklet describing this great orchard implement—it's free for the asking.

**W. A. JOHNSTON, Manufacturer**  
**THE DALLES, OREGON**

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

placed in the car. In either case the fruit is subjected to strong currents of very cold air until the desired temperature is reached. I cannot go into detail here. However, allow me to add one word of warning. Precooling is not a panacea for all conditions which may arise. It is not intended as a substitute for carefully picking and packing of the fruit. However, it will do this: It will prevent the germination of decay spores during transit, and that is what we want. Greater uniformity in temperature between the top and bottom tiers is also secured during transit because it has already been reduced as low, or even lower, than that at which it is to be held during the entire trip.

Oregon and Washington fruits are now receiving attention. Last summer it was my good fortune to be employed by the Department of Agriculture in the experimental work of precooling cherries and loganberries at Salem, and raspberries at Puyallup, Washington. Results so far indicate that precooling is a big aid in helping the refrigerator car to maintain a low and uniform temperature during the entire trip, raspberries arriving in Kansas City in splendid condition. At Salem precooled cherries, at the end of fifteen days, showed less decay than the unprecooled by 4.1 per cent; loganberries, at the end of ten days, 25.6 per cent. The data on prunes has not been compiled. However, indications point to a successful outcome of that work. The problem of precooling is coming home to us. We are looking for new markets. With the enormous output of fruit expected in the Northwest during the next few years new outlets must be found. We ought to get ready for the Panama canal. If we Oregonians, after raising the finest brand of fruit that can be raised anywhere, cannot place it on a distant market in tip-top condition we cannot hope to capture the growing markets of the world. Although precooling is yet in an experimental stage, Californians are not only willing but anxious to take advantage of everything that has already been learned. Precooling has already received a commercial application on a large scale. Surely we ought to profit by California's experience. We ought to organize; we ought to give support to every movement that will help us to retain the leadership and reputation of which we are justly proud.

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Price: 1-lb. cans 30c, 3-lb. cans 85c, 10-lb. cans \$2.65, 20-lb. cans \$4.80

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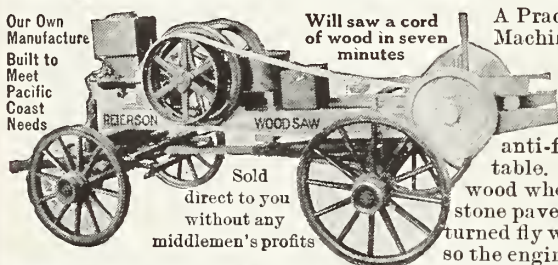
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## The Necessity of Fruit Spraying

By C. J. Zinther, former Professor Agricultural Engineering, Iowa State College

**N**OW that the season is on to spray fruit trees the question comes up again what fruit spray to use and which one is going to give the best results for the least money. There is no longer any question about the necessity of spraying, because without it the crop is almost certain to be a failure. There are so many different sprays on the market that it is hard to choose and get the right one for the right season. However, a spray that will act as a germicide, insecticide and a fungicide, one that can be used without injury or inconvenience to the hands or face, should be welcomed by every farmer and horticulturist. Neither the Bordeaux mixture, arsenate of lead, formal-

ine, lime-sulphur, paris green or tobacco meets these requirements, as everyone familiar with spraying knows.

There is, however, a spray on the market which will meet all of these requirements. The Crest spray, manufactured by the Crest Chemical Company, Seattle, is a heavy mixable oil that mixes readily with water and remains in solution, forming an emulsion, so that practically no stirring is necessary during the spraying. Its chemical analysis is said to be tar and kindred products, naphthal, pyroligneous acid, douglas fir oil, phenols, creosote, turpentine resin, sulphur and soda. It is non-poisonous and harmless to the operator and he can put

his hand in the solution without any other effect than that it removes the dirt. It requires no boiling or preparation like lime-sulphur and other sprays. It is shipped in very concentrated form, so that while its price, \$1.25 per gallon in barrel lots, is higher than most sprays, yet it is diluted with fifty parts of water to one of the spray for winter spraying, and for summer spraying seventy-five to one hundred parts of water is used with one of the

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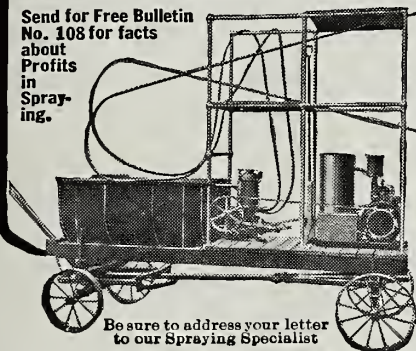


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Embodies every convenience. Pump started and stopped from upper platform. Built on a platform of standard width so that it can be placed on any farm wagon. Also can be used as a portable pumping outfit or fire engine. Engine can be quickly removed and used to furnish power for any other purpose. November to May is the time to spray, and after doing your own trees you and the boys can go out and clean up the cost of your outfit in a week by spraying for your neighbors. Write at once for Bulletin No. 108, giving startling facts in regard to the profits to be derived from spraying, together with full and complete instructions, formula, spraying calendar, etc.

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Spraying Dept., Bulletin No. 108, Detroit, Mich., U. S. A.



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Pat'd June 2, 1903.

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For Delivery by March

By so doing you will avoid the delay in delivery caused by the rush in orders which occurs every spring. Your fertilizer should be sowed in early spring during the first lull in the spring rains. The rains which follow will thoroughly disintegrate the fertilizer, producing a plentiful supply of humus for the year's crop, and things will grow in abundance and to perfection. The cost is a trifle compared with the increased results obtained—bigger crops, better produce, highest prices.

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Our "A-Special" fertilizer for hops is a perfect wonder-worker—produces larger hops of better quality. Write for testimonials and booklet explaining how these fertilizers work. The information is worth hundreds of dollars to any farmer. It is free for the asking.

**UNION MEAT CO., North Portland, Oregon**

spray. In this way it is more economical than lime-sulphur. It does not require near as heavy pressure on the spray pump as lime-sulphur, being composed of oils which have a great spreading power when applied to wood. It penetrates the bark of the tree and the cocoon of the insects much better than the lime-sulphur. This gives it a better covering power, so that one gallon goes about as far as two of other sprays on account of the less pressure required.

One farmer figured out his spraying bill like this: Five barrels lime-sulphur spray equals 250 gallons, diluted eight to one makes 2,000 gallons. Five barrels at \$10 and \$1.50 freight each, cost \$57.50; one barrel Crest spray, 50 gallons diluted fifty to one makes 2,500 gallons of spray for winter spraying or 5,000 gallons summer spraying. It costs \$62.50 and \$1.50 for freight and equals \$64. On account of less pressure required one gallon will cover as much as two of the lime-sulphur, consequently the cost of this spray to the farmer is considerably less than the others, and when it comes to its convenience in handling this can best be appreciated by using it.

When we examine the analysis of the Crest spray we find that over ninety per cent of its ingredients are extracts from fir stumps on logged-off land. This, then, is a solution to our logged-off land problem—to utilize the stumps by extracting the antiseptic oils from them and manufacture these into spray and other products. In this way the stumps become a source of revenue instead of an expense. The Crest Chemical Company has been at work on this important problem for four years, and their spray has met with favor wherever tried. It has the endorsement of the agricultural experiment station, and repeating orders are always the rule by those who have tried it. The company also manufactures poultry spray, rose spray (a cure for mildew), disinfectant and manure oil.\*

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Stands for better farming and better crops. You use less seed, but better tillage. It teaches you how to breed and select seed, how to conserve moisture so that your crop will not be ruined in the hot, dry spell, and how to mature a crop on a small amount of rainfall.

### \$208 Net Per Acre

Is what one man did in 1911 using the Campbell System on land that cost \$12.50 per acre. Would you like this man's story as he tells it? Send us a postal, giving your name and address, and we will mail you a sample copy of the Scientific Farmer, a catalog of the Correspondence School, and this man's story. **DO IT NOW.**

**CAMPBELL SOIL CULTURE CO., LINCOLN, NEBRASKA**



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Two million workers the world over testify to the durability, economy, labor and time saving advantages of all Planet Jr tools. They bring

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Heavier Pocket-book**

Wherever you are, whatever you grow, Planet Jrs are *scientific* aids to bigger profits. Made by a practical farmer and manufacturer; every tool guaranteed.

**No. 25 Planet Jr Combined Hill and Drill Seeder, Double Wheel Hoe, Cultivator, and Plow,** capital for large-scale gardening especially, has automatic feed-stopper, seed index, and complete cultivating attachments. *Indestructible steel frame.*

**No. 16 Planet Jr Single Wheel Hoe, Cultivator, Rake, and Plow** is light, handy, and adapted to almost every garden use. Has leaf guard for close work and lasting steel frame.

**FREE! A 64-page illustrated farm and garden book!** It's brimful of valuable farm and garden hints, besides showing 55 tools for all kinds of cultivation. **Send postal for it today!**

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We Fence Anything from a Lawn to a Railroad

**NATIONAL RABBIT-TIGHT FENCE**

TURN'S THE RABBITS

**PORTLAND, OREGON**

## Idaho State Horticultural Meeting

By E. F. Stephens, Nampa, Idaho

THE fifth annual convention of the Idaho State Horticultural Society, held at Weiser January 25, 26 and 27, was very well attended. The proceedings were full of interest and received close attention from the wide-awake body of horticulturists present. An occasion of this character furnishes an excellent opportunity to advertise the state. This opportunity should not be overlooked. Items gleaned from the more important papers and from interesting discussions may be of general interest.

J. U. McPherson, state horticultural inspector, reported that up to this time there had been planted in Idaho about one hundred and twenty thousand acres of orchard, in Oregon about one hundred and fifteen thousand acres of orchard, in Washington about one hundred and fifteen thousand acres of orchard. Additional areas of commercial orchards are being planted from year to year. This led Mr. McPherson to urge, first, that varieties adapted to elevation and district should be selected; second, better methods of cultivation, careful spraying, pruning, thinning of crop; and yet more important perhaps than any of these, that the fruit should be carefully graded and packed and honestly marked, so that when a box was marked "extra fancy"

the purchaser should find that the fruit from top to bottom was really exactly what it claimed to be. This would help to build up the reputation of Idaho fruit and result in its being sold to best possible advantage. During the trip of the governor's special Mr. McPherson visited for several days the apple markets in Chicago. He found that Idaho fruit of the extra fancy Jonathan had sold at from two dollars and twenty-five cents to four dollars per box, with an average of three dollars and ten cents per box. Extra fancy Rome Beauty sold at from two dollars to three dollars per box, with an average of two dollars and fifty cents per box. Fancy grade Jonathan sold at one dollar and fifty cents per box, fancy Rome Beauty one dollar and seventy-five cents, fancy Ben Davis seventy-five cents to one dollar. Third grade, termed choice, sold at seventy-five cents to one dollar per box.

The cost of growing and packing fruit, especially where paper wrapped, costs from forty to fifty cents per box. The freight rate averages fifty cents per box. It therefore costs the grower ninety-five cents per box to produce fruit and get it into the Chicago market. Evidently there is a margin to the grower of two dollars and five cents per box, less the commission and sale

expenses on the extra fancy grade. A margin of one dollar and fifty-five cents, less selling expenses on the fancy grade, whereas the choice grades might return five cents per box and sometimes nothing at all. Hence the supreme importance that in the selection of soil and location, cultivation, pruning, thinning and every detail connected with picking, packing and marketing there should be the utmost skill and care exercised in the effort to grow the largest possible percentage of extra fancy and fancy grades. Hardly wise to make any shipment of third grade fruit to Eastern markets. The experience of the past season and of preceding seasons has been that the demand for extra fancy grades of fruit has never yet been supplied, and with the rapid expansion of markets there was every possible encouragement for the feeling that the market for extra fancy grades was not likely to be fully supplied. Hence the supreme importance of so using our superior soil, climate and conditions as to transportation as to develop and place in market the largest possible percentage of extra fancy and fancy grades of fruit. In supporting this suggestion Mr. McPherson quoted statistics, stating that some years ago there was grown and marketed a crop of sixty million barrels. During the year 1911 the commercial crop of apples in the United States was about thirty million barrels, and during

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You want three things in a wire fence: 1, a fence that will give years of satisfactory service; 2, the style and height best suited to your purpose; 3, and at a reasonable price. Our prices

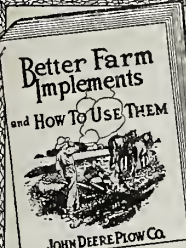
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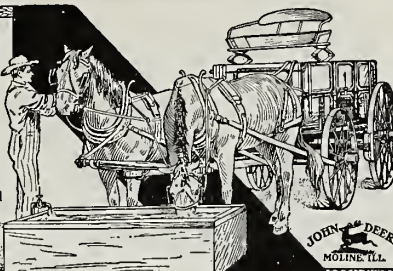
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There is a wagon made that is stronger, more durable and of lighter draft than any other. This wagon is

### Built Like a Bridge

Entirely of steel I-Beams, Channels and Angles, solidly held together with large steel rivets, put in hot under great pressure. Like the steel railway bridge, it is constructed for hardest lifetime service. Strong and durable.

Each front gear and each rear gear is practically one solid piece that cannot come loose or apart.

### Steel Wheels

This wagon has steel wheels that are trussed and made with a tension,

the strongest known wheel construction. Every spoke is staggered and forged hot into the tire.

Regardless as to whether the spoke is at the top, side or bottom of the wheel, it always carries its share of the load.

### Roller Bearings

That roller bearings reduce draft is generally conceded. Of the various styles, the straight roller bearing is the simplest and most successful.

For this wagon the straight roller bearing is especially adapted.

The spindles and hubs are straight. Consequently, as this wagon is equipped with straight roller bearings it is of light draft.

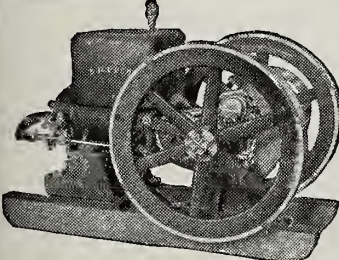
A little book we'll be pleased to send free, tells of a good many more superior features this wagon has.



The Roller Bearing

Be sure to tell us whether you want your copy of "Better Farm Implements and How to Use Them" and in order to get the "Wagon Book" containing full information regarding the above described wagon, ask for Package No. B46


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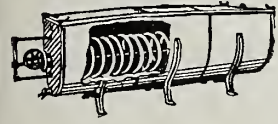





You know an engine is not an expense, it is the most profitable investment you can make. Ten cents worth of gasoline will pump more water, saw more wood, grind more feed than a \$4 man could do in a day and it will do it so much quicker and better that there is no comparison.

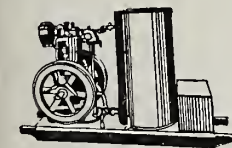

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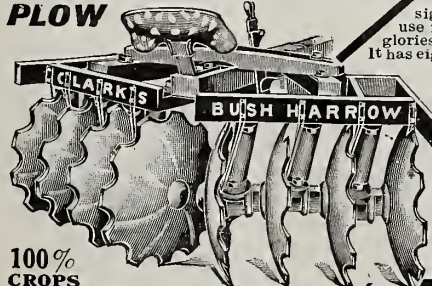
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## CLARK'S REVERSIBLE CUTAWAY BUSH AND BOG PLOW



100% CROPS

This machine is built especially to subdue newly cleared timber land and bogs to a seed-bed fit for a garden. Twenty-five years of experience has taught us how to build this machine right. It is designed for efficiency, strength, and durability. Its use means destruction to bushes, bunch grass, morning glories, or any wild plant that is preventing best cultivation. It has eight 24-inch "Cutaway" cutlery steel disks, which cut a strip 5 ft. wide and 9 inches deep. It will throw the soil to or from the center, leaving the land level. This tool makes money for the owner every year, and its life is indefinite. Shipping weight, 625 lbs.

Write today for free booklet "Intensive Cultivation." It fully describes our complete line of tools for every crop.

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CUTS THE SOIL TWICE

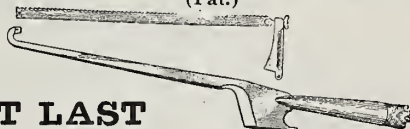
MITCHELL, LEWIS & STAVEL CO., Western Agents, Portland, Oregon

this period there had been a considerable increase in population of the United States and an additional outlet in foreign markets has been created.

Commercial Cherries for Southern Idaho.—Choose sour varieties, preferably Early Richmond, English Morello and Late Duke. The Montmorency is a good family cherry, but its habit of ripening for a considerable period of time renders it less convenient to pick for the commercial market. A cherry is very sensitive to frost when in full bloom. It can endure a lower range of temperature while it stands in the "jacket," so-called. Mr. Henry Yost of Meridian preferred to plant at spring time, using one-year-old trees headed at thirty inches. In pruning it should be borne in mind that the Early Richmond and Late Duke require air to develop fruit of the best quality. With the English Morello, the more dense the head the more completely the fruit is shaded—the better the fruit. The cherry thrives best with excellent cultivation and comparatively little water. A warm, loose soil seems conducive to the health of the cherry. Should the tree be troubled by the black aphid use kerosene emulsion. If troubled with the slug spray with one pound of arsenate of lead to twenty-five gallons of water. Mr. Yost would plant the cherry trees eighteen to twenty feet apart. At the age of six years a well grown tree should yield twenty-five gallons of fruit, which, in his experience, sold at twenty-five to thirty cents a gallon. B. F. Hurst of Boise reported that from his orchard of Duke cherries he cleared three hundred dollars per acre. Mr. Hurst pays his pickers from four to five cents per gallon. In Southern Idaho the Russian mulberry fruits freely, but apparently the fruit is not preferred by birds, and it does not here serve as a protection against the birds in the cherry orchard.

In the discussion of pears and pear culture in the Northwest, E. E. Whistler of Medford, Oregon, stated that they had found Bartlett, Anjou and Buerre Bose most reliable and most profitable. They have experimented with the Comice, had sold a ear of it for the highest prices ever paid for pears in New York, but the variety proves so difficult to grow, so delicate and tender, that they wish now to forget it and not to plant this variety. To guard against blight requires watchful care, and the removal of the blighted portion of

## THE MONARCH PRUNER (Pat.)



### AT LAST

A pruner that does the work the best way in the best time. Place the guide-arm against the limb to be severed, thrust forward, and presto! the work is done—neatly, smoothly, quickly done, without leaving stub or injuring tree. Saw attachment for extra large limbs. Get your season's work done with the BEST. Isn't your time valuable? Saves time—hence money. Ask your dealer or write us. Expressage prepaid. MONARCH PRUNER & MFG. CO., Inc., Box 1463, Spokane, Washington.



each tree as soon as blight appears; this, by removing source of infection, lessens the probability of blight. The character of cultivation has something to do with the production of blight. Blight is more likely to occur when trees are growing rapidly and rankly, the softer tissues admitting of the reception of blight spores. Therefore such method of cultivation, or lack of cultivation, as will give a comparatively slow growth and well ripened wood lessens the probability of blight. In large commercial pear orchards it is customary to employ a man during the blighting months—June and July—to watch the orchard carefully, cutting out the blight as it appears. In smaller orchards watchful care on the part of the men who are doing the cultivating has proved sufficient to keep the blight in check.

**The Italian Prune.**—At this moment there is a marked interest in planting prunes. The harvesting of the crop immediately precedes the season for picking the Jonathan apple. As Mr. Hurst of Boise stated, a prune crop enables the grower to gather together a force of workmen, get acquainted with them, retain the better and perhaps drop out the less satisfactory workmen before engaging in the handling of the main apple crop. The superior quality of the Southern Idaho prune is indicated from the fact that in the John Steel orchard at Parma the sugar content of the dried prune runs as high as thirty-four per cent, only two and one-half to three pounds of the green fruit needed to produce a pound of the dried product. The green fruit can be dried at an expense of eight dollars per ton, or twenty-four dollars per ton for the dried product. The John Steel orchard, in 1910, yielded two hundred and fifty pounds per tree. This, at one hundred and eight trees per acre, gives a yield of twenty-seven thousand pounds per acre, nearly a carload. The 1911 prune crop in the John Steel orchard sold at one hundred and sixty and one hundred and seventy dollars per ton. The superior quality of the Southern Idaho prune is widening the market both for the crop sold green and for the dried product. The prune is no longer a boarding-house joke.

**By-Products.**—E. P. Smith of Payette discussed the question of "What shall we do with inferior fruit?" The first point mentioned in the discussion was that extreme care should be taken to give such superior cultivation, to prune with such skill, to cultivate and spray with such intelligence and care, to thin the fruit in summer, and thus grow comparatively little fruit of inferior quality. There would, however, be some fruit unavoidably bruised in handling, and a percentage of fruit that for varied reasons should not be boxed and placed on the market. The outlet for this class of fruit is through the cannery, evaporator and the vinegar factories. Through the evaporator low grade apples are netting five to ten dollars per ton for the green fruit.

## Planet Jr No. 41



This **Orchard and Universal Cultivator** is made by a man who tilled ground himself and knows the actual needs of the up-to-date orchardist.

It saves time and labor in orchard, vineyard, and hopyard and has fruit tree shield and side hitch for low trees. The strong, light frame, low wheels, and tongue are all of steel. Convertible into disc harrow. Carries teeth, sweeps, furrowers, plows, etc. Works deep or shallow and cuts from 4 feet to 6½ feet wide. The most efficient tool for all broad cultivation. **The new 1912 special weeder attachment** is the most perfect weeder ever invented.

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Write today for this invaluable handbook! You'll find it brimful of suggestions to get better crops with less work. 55 orchard, farm, and garden tools described. You can't afford to miss it! **Send postal for it today!**

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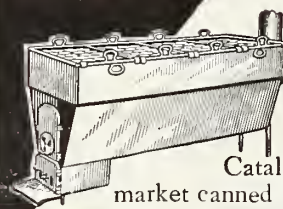
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**A Home Canning Outfit Means Big Profits**



## Don't Let Your Surplus Fruits and Vegetables Go to Waste

Thousands of dollars worth of fruits and vegetables go to waste every season. It may be the market is overstocked, prices low, or the supply must be disposed of at once; whatever the cause, the farmer who will invest a few dollars in a

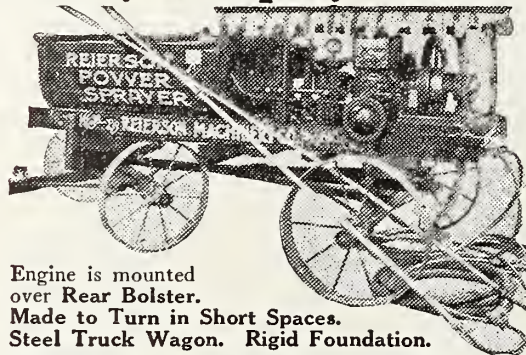
## STAHL Canning Outfit

for taking care of the farm or garden produce that cannot be sold will be surprised at the amount of money he can make upon his investment. We'll start you out with everything needed to make a complete canning factory on the farm. Stahl Canning Outfits are the best and cheapest, made in all sizes, fully guaranteed.

Catalogue describing these Cannerys and telling how to market canned goods to the best advantage sent free on request.

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Engine is mounted over Rear Bolster. Made to Turn in Short Spaces. Steel Truck Wagon. Rigid Foundation.

Won the blue ribbon, highest award, over all competitors at the Salem State Fair in 1911. Equipped with 2½ H. P. 4-cycle Waterloo Boy Gas Engine. Special latest triplex spray pump. Easy get-at-able to all parts.

**Lightest, Most Compact**

*Guaranteed to Be the Best*

Built throughout of *Special Machinery* adapted for spray pumps. Will stand up perfectly under 250 pounds steady pressure. For small orchards we recommend our "Pippin" Duplex Power Sprayer—guaranteed to maintain a 225 pound pressure—at \$150.00. Write for catalog S 4

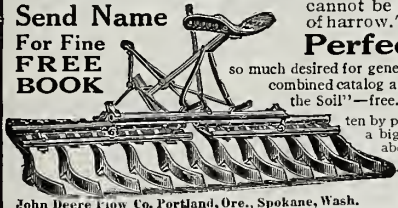
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## This Low Priced, Light Draft, Riding Harrow, Keeps Down Weeds In Orchards

The "Acme" is an orchard tool because it is a perfect weed exterminator and surface mulcher, and there are no lumps or air spaces left beneath or on the surface after it is used. It will prepare the soil so that it will conserve all the moisture to benefit the growing trees or vines. The No. 25 Special Orchard Tool has been endorsed by the best orchardists in this country, because it has features that cannot be had on any other style of harrow. The Acme produces the

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## ACME

Cuts, Turns,  
Crushes  
Levels and  
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In One  
Operation

The Idaho Canning Company paid forty dollars per ton for peaches, forty-five dollars per ton for Bartlett pears, eight dollars per ton for apples. Judge Fremont Wood reported that a Lewiston, Idaho, canning plant employed seventy-five people, and paid one to one and one-half cents a pound for apples. This company is not able to supply the demand for their product. Discussions on this subject mentioned the importance of shipping only extra fancy and fancy grades of apples and utilizing the remainder in by-products.

Watsonville Methods.—Mr. W. N. Yost of Meridian, the secretary of the

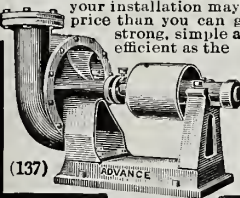
society, had visited Watsonville, California. This district annually shipped some five thousand cars of apples. There are ninety packing houses in and about the town. Conditions at Watsonville are peculiar in that the orchards are largely owned by Americans who acquired the land at an early date and had planted orchards. The habit of the district was almost invariably to sell the fruit on the trees. As soon as the orchard is out of bloom the fruit is usually sold, one-fourth payment at that time, one-fourth in midsummer and the remaining one-half in autumn. The spraying, picking, packing and sale

of the fruit is in the hands of another class of people. They are wholly concerned with the care of the fruit, its picking, packing and sale. This work is in the hands of Slavonians, Japs and Chinamen. The grower of the fruit is satisfied to receive twenty-two cents a box for the fruit. The climate and soil conditions are such that even the twenty-two cents a box, on tree, returns three hundred dollars per acre. In some orchards a strawberry crop is grown on the same ground, increasing the gross product and the profit. The work of spraying is carried on with such care and success that one orchard has a standing offer of two dollars for any wormy apple that can be found within the orchard.

The changed conditions surrounding the grower at this time and one hundred years ago were brought out by the statement that in 1800 ninety-eight per cent of the people were producers. In 1890 only fifty-eight per cent were producers, forty-eight per cent were consumers. Twenty years ago the farmers received seventy-two per cent of the price paid by the consumer. In 1910 the producer received only thirty-eight per cent of the price paid by the consumer. The resulting high cost of living should be modified by an increasing number of people moving back to the land. The question of mice in the orchard received some discussion. In some districts, and especially where the trees stand in weeds, clover or alfalfa, some trouble is experienced from mice. At New Plymouth considerable harm has been sustained. In this discussion Mr. Hurst of Boise recommended one ounce of strychnine dissolved in two gallons of water; dissolve in this sugar to cover the bitter taste of the strychnine. Soak in this one-half bushel of wheat; scatter the poisoned wheat in the runways of the mice. Another suggestion—strychnine can be more completely and rapidly dissolved in warm vinegar.

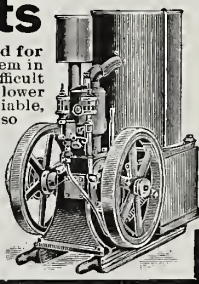
## Detroit Irrigation Plants

are the best that money can buy. Sold at lower prices than are asked for inferior plants. No more irrigation troubles! We have solved the problem in a way that is at once the most satisfactory and economical. No matter how difficult your installation may be, we can fit you out with a better outfit at a lower price than you can get elsewhere. You MUST have a thoroughly reliable, strong, simple and economical engine, and there is none other so efficient as the



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in combination with just exactly the right pump adjusted and arranged in just exactly the right manner for your particular work. If you want advice as to how to proceed to get the best results with the least investment and cost of operation, write us at once, giving full and complete details, addressing your letter to our Irrigation Specialist, Detroit Engine Works, P. O. Box 506, Detroit, Mich.



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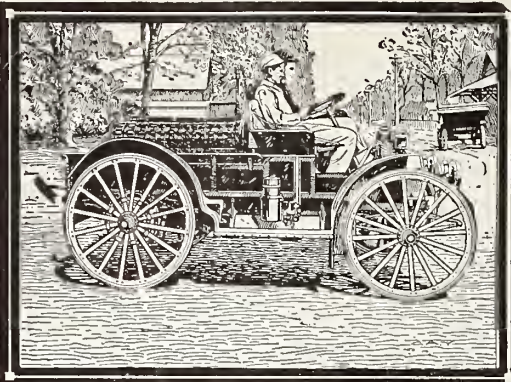
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## Fertilization of Fruit Blossoms by Honey Bees

By J. D. Yancey, Bridgeport, Washington

**E**VERY up-to-date fruitgrower is supposedly interested in whatever tends toward a bigger and better fruit crop. Much attention is given to selection of the proper location, nature of the soil, nursery stock, cultivation, pruning and spraying. This is all very well, of course, but it seems to me that one of the most important details of the business is almost, in fact in some cases is entirely, overlooked. This is the pollination or fertilization of fruit blossoms. It has been demonstrated by actual experiments, that while a few varieties are self-fertile, that is capable of being fertilized by pollen from their own blossoms, the great majority require cross-pollination for the best results. For this reason the fruit-grower is advised to plant different and suitable varieties in alternating rows or divisions of the orchard; but having done this, the average grower is content to leave the more important work of carrying and distributing the pollen to the individual blossoms to the fickle

winds and the few insects which are abroad at this season of the year.

There are three methods of pollen distribution—artificial, by hand, by the means of winds and by insects. Artificial fertilization is, of course, impracticable except for scientific experiments; and it has been proven time and again that the wind is a very insufficient and unreliable agent at best. Every orchardist of experience has probably noticed that if fruit bloom be accompanied by weather so cool and cloudy as to prevent the flight of bees and other insects a very small percentage of fruit will set, even though there be no actual damage from frost, while the reverse is true, provided conditions are favorable to an abundant flight of honey and pollen gathering insects, by far the most important of which is the honey bee. This being true and weather conditions favorable, the fruitgrower may insure the abundant setting of fruit by supplying plenty of bees at the proper time, just

as readily as he can bring that same crop to a successful maturity by spraying and cultivation, and I expect to see the day when every commercial fruit-grower will consider his equipment incomplete without a few colonies of bees. As to just how many bees would be a sufficiency under all conditions would be very hard to say, but rest assured of this fact, there is absolutely no danger of having too many for this purpose. A great deal depends on the variety of bees, and still more on weather conditions. If the days are bright and warm, twenty-five strong colonies of Italian bees will cover everything in good shape for a distance of half a mile; but, on the other hand, if it should be cool, windy or cloudy weather at this time they will not range nearly so far in sufficient numbers to insure proper fertilization of all blossoms. (This is especially true of the common black bee.) For this reason I would much prefer a smaller number of hives at closer intervals—say five or six every quarter of a mile, or on every twenty or thirty-acre tract if the trees are large.

## Protect Your Trees

**DON'T** take chances with your young trees. One rabbit will kill many in a single night. Mice and cut worms will damage and destroy them if you don't protect them. Get dollars' worth of protection at a fraction of a cent cost by using

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Absolute protection against gnawers and borers. Prevent trees from becoming skinned and bruised by cultivator or lawn mower. Made of elm veneer, chemically treated. Easily put on and will last until tree is beyond needing protection. Don't wait until some of your trees are killed—order Hawkeye Protectors now. Regular size 10 inches wide, 20 inches high. Price in lots of 100—1 cent apiece, in lots of 1000—1/2 cent apiece. Special sizes made to order. Write for circular and samples.

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# Be 15 Times Sure and You'll not be Sorry

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There is so much work on the farm for a reliable, efficient gasoline engine—water to pump, cream to separate, clothes to wash, wood to saw, trees to spray, seed to clean, grain to grind, feed to cut, hay to bale, grain to thresh etc.—that no farmer can afford to be without one.

## Money is Saved

The money saved in hired help and horse flesh will soon pay for it, besides the work is better done. It costs only a few cents a day per horse power for the fuel.

## Secret in Buying

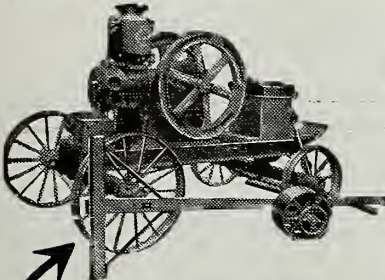
Now, it is just as important to know the good points, when buying a gasoline engine, as when buying a horse or cow, to get your money's worth. Be sure that the engine you buy has the following "good points" and you will not be sorry.

## The Good Points

1 **Be Sure** the engine has experienced builders and a record for good service back of it. **The Olds** has been built for 30 years and has "made good."

2 **Be Sure** you get a "four-cycle" engine. This type takes about half the fuel. **The Olds** is "four-cycle."

3 **Be Sure** you get a horizontal engine. It is the most accessible and best for power purposes. **The Olds** is horizontal.



Olds Portable Engine

4 **Be Sure** you get a Seager mixer. It will give you more power with less fuel. There is nothing to get out of order. **The Olds** has one.

5 **Be Sure** you get vertical valves. They wear longer and hold tighter. Ask us why **The Olds** has them.

6 **Be Sure** the hopper is separate from the cylinder. It saves expense in case of an accident by freezing. **The Olds** hopper is separable.

7 **Be Sure** you get a one-piece cylinder. Gaskets for the head are difficult to replace. Try it once. **The Olds** has no gasket.

8 **Be Sure** the gears are inside the crank case. They run in oil and are not liable to damage. **The Olds** is built this way.

9 **Be Sure** the engine has a gasoline separator to take out water and grit. It will save lots of trouble. **The Olds** has one.

10 **Be Sure** the intake valve is held positively closed when the governor is in action. This will save your fuel. **The Olds** is so made.

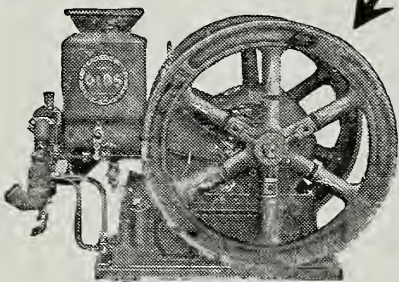
11 **Be Sure** the ignition device has an electricity economizer. Your batteries will last twice as long. **The Olds** has one.

12 **Be Sure** the governor is so made that in case it should break the engine will stop. No danger from racing then. **The Olds** governor will do this.

13 **Be Sure** you get jump-spark ignition. It saves batteries and fuel. Let us explain. **The Olds** has this type.

14 **Be Sure** you get a guarantee against breakage, flaw or no flaw. **The Olds** has such a guarantee.

15 **Be Sure** you get **The Olds Gasoline Engine** and you will be sure to get all the above "good points" which you cannot do with any other engine on the market.



Olds Stationary Engine

**There Are As Many More GOOD POINTS**  
Write us for further Explanation and Catalogue.

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NAME..... ADDRESS.....

It may be contended by some that so many bees in a neighborhood would not be able to support themselves, but I will venture the assertion that they will, provided you do not rob them of their stores at a time when they cannot replace them. But suppose you should have to spend a dollar or two for their maintenance; what of it, provided you can by so doing lay the foundation for a profitable fruit crop. When locating the hives place them right among the fruit trees, not only to shorten the distance of the bee's flight in cool weather but also that the odor of new honey and pollen, for which they are always very ravenous at this season, will attract them from the hives when otherwise they would not stir from the warm swarm cluster.

Now, mister fruitgrower, I have tried to show you the necessity of having plenty of bees for this most important work, and it is now up to you to get busy. It is not too early right now to make plans for the coming season by visiting some bee-keeper and contracting for the necessary number of colonies. I would not purchase outright, however, until the weather is warm enough to permit opening the hives for an examination of inside conditions. Make sure that the bees are in movable frame hives, thus allowing of a thorough examination at any time; also that the swarms are strong; that each colony has plenty of stores to last until settled warm weather, and last, but not least, remember that Italians are to be preferred to common blacks every time, even though they cost twice as much per colony, for this reason: Italians build up a strong swarm much earlier in the spring, and being a hardier race of bees, fly freely when the weather is so disagreeable that the blacks will not leave the hive. Pure blooded Italian bees are distinguished by three or more yellow bands about the abdomen.



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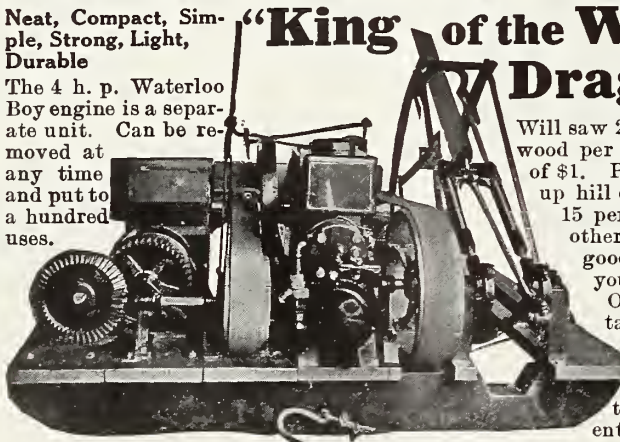
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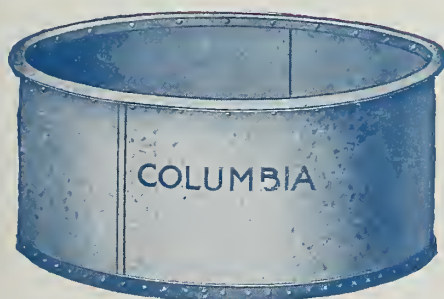
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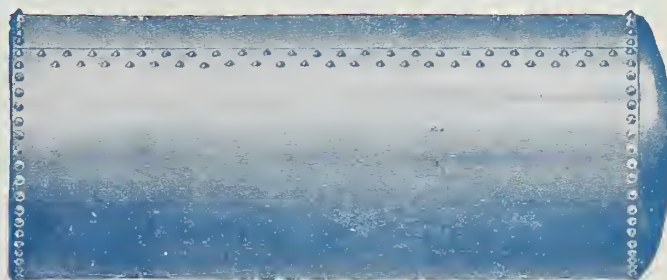


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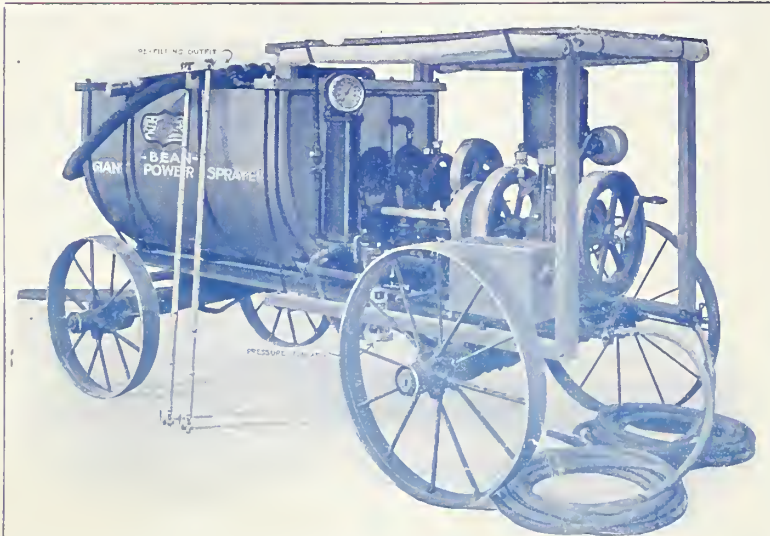
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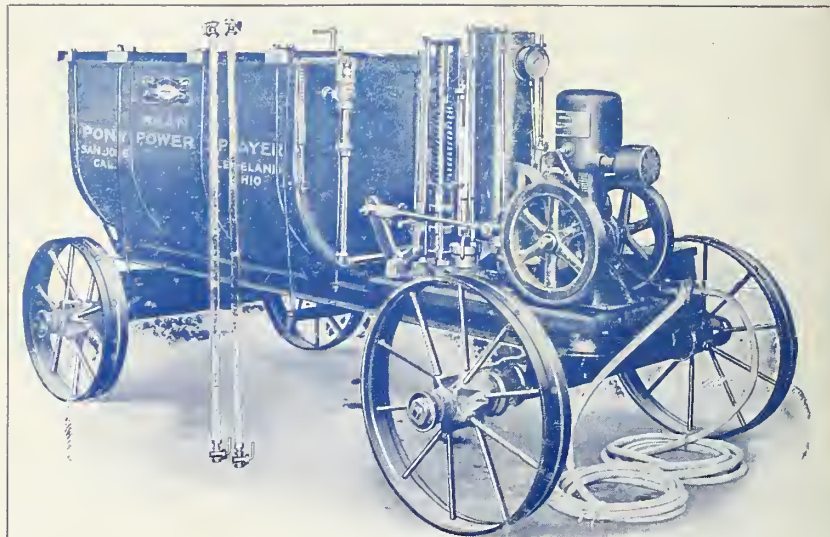
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